Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

SHOUT
SHARE
IT

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 624

Contribution from the Bureau of Plant Industry
WM. A. TAYLOR, Chief

Washington, D. C. PROFESSIONAL PAPER July 25, 1918

CITRUS-FRUIT IMPROVEMENT
A STUDY OF BUD VARIATION IN THE VALENCIA ORANGE

By

A. D. SHAMEL, Physiologist in Charge, L. B. SCOTT, Pomologist, and C. S. POMEROY, Assistant Pomologist, Fruit-Improvement Investigations
Office of Horticultural and Pomological Investigations

CONTENTS

	Page		Page
California Citrus Varieties	1	Individual Variations of Fruits	12
History of the Valencia Variety	2	Minor Variations of Fruits	13
Variability within the Variety	3	Lessons Taught by These Investigations	13
Occurrence and Frequency of Bud Variations	4	Presentation of Data	14
Objects of the Investigations	5	Comparative Value of the Strains	114
Plan of the Investigations	6	The Unintentional Propagation of Undesirable Strains	115
Methods of Keeping Performance Records	7	The Isolation of Strains through Bud Selection	116
Descriptions of Some of the Important Strains	8	Top-working Undesirable Trees	118
		Summary	119

LIBRARY
RECEIVED
★ AUG 30 1918 ★
U. S. Department of Agriculture

WASHINGTON
GOVERNMENT PRINTING OFFICE
1918

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 624

Contribution from the Bureau of Plant Industry
WM. A. TAYLOR, Chief

Washington, D. C. PROFESSIONAL PAPER July 25, 1918

CITRUS-FRUIT IMPROVEMENT: A STUDY OF BUD VARIATION IN THE VALENCIA ORANGE.[1]

By A. D. Shamel, *Physiologist in Charge*, L. B. Scott, *Pomologist*, and C. S. Pomeroy, *Assistant Pomologist, Fruit-Improvement Investigations, Office of Horticultural and Pomological Investigations.*

CONTENTS.

	Page.		Page.
California citrus varieties	1	Minor variations of fruits	13
History of the Valencia variety	2	Lessons taught by these investigations	13
Variability within the variety	3	Presentation of data	14
Occurrence and frequency of bud variations	4	Comparative value of the strains	114
Objects of the investigations	5	The unintentional propagation of undesirable strains	115
Plan of the investigations	6	The isolation of strains through bud selection	116
Methods of keeping performance records	7	Top-working undesirable trees	118
Descriptions of some of the important strains	8	Summary	119
Individual variations of fruits	12		

CALIFORNIA CITRUS VARIETIES.

The commercially important varieties of citrus fruits grown in California are the Washington Navel, the Valencia, and the Mediterranean (*Mediterranean Sweet*) oranges; the Dancy tangerine; the Eureka and Lisbon lemons; and the Marsh (*Marsh Seedless*) grapefruit. Other less important varieties grown only to a limited extent include the St. Michael, Navelencia, Ruby blood, and Malta blood oranges, and the Villafranca lemon. Of the two leading orange varieties the Washington Navel is by far the most widely cultivated, producing an annual crop of about 27,000 carloads of fruit.[2] This variety ripens its fruit from November to June, inclusive. The Valencia ripens its fruit from June to October, inclusive, and produces

[1] This is the second in a series of publications summarizing the citrus-fruit improvement investigations of the Department of Agriculture. The first report of this character was presented in the following publication: Shamel, A. D., Scott, L. B., and Pomeroy, C. S. Citrus-fruit improvement: A study of bud variation in the Washington Navel orange. U. S. Dept. Agr. Bul. 623, 146 p., 16 figs., 19 pl. 1918. In that bulletin the methods of conducting the investigational work are described more in detail than in the present publication.

[2] Wallschlaeger, F. O. The world's production and commerce in citrus fruits and their by-products. Citrus Prot. League, Cal., Bul. 11, p. 70. 1914.

14648°—18—Bull. 624——1

an annual crop of about 8,500 carloads. All other varieties of oranges grown in California produce annually about 4,500 carloads of fruit, ripening their crops mostly in the spring and early summer months. At the present time the increase in the plantings of the Valencia orange in California is greater than that of any other orange variety. For this reason studies of the characteristics of the variety and methods of improving and increasing its production through bud selection during propagation are of special interest.

HISTORY OF THE VALENCIA VARIETY.

The Valencia orange (*Citrus aurantium sinensis* L.) was introduced into California from at least three sources at about the same time. According to William Wood,[1] horticultural commissioner of Los Angeles County, A. B. Chapman and George H. Smith, of that county, received an unlabeled package of orange trees from Thomas Rivers, of London, England, in 1876. Mr. Chapman planted these trees in the nursery on his ranch at San Gabriel, Cal. Buds were propagated from all of these trees and grown until they came into bearing. The only variety which proved to be of value was one which Mr. Chapman called Rivers Late. Col. J. H. Dobbins, of San Gabriel, secured buds of this variety, and when the trees propagated from these buds came into bearing a shipment of the fruit was sent to eastern markets. These oranges brought $4 per box. As a result of this experience the variety became very popular and was widely planted by citrus growers. At that time a citrus grower from Valencia, Spain, was shown the fruit and identified it as the variety called in Spain "La Naranga Tarde de Valencia." Mr. Chapman adopted this name, and it has since been called the Valencia Late, or, more commonly, the Valencia orange.

The other sources of trees of this variety were introductions into California from Florida by several southern California nurserymen, particularly Frost and Burgess[2] and Twogood and Cutter, located at Riverside. The variety had been introduced into Florida by two different persons. About 1870 General Sanford, of Palatka, Fla., obtained a variety of orange from the Rivers nurseries. This variety was labeled Brown.[3] Shortly after the Sanford introduction Mr. E. H. Hart, of Federal Point, Fla., introduced the variety into Florida from the Parsons nursery of Flushing, N. Y.[4] The Parsons nurseries had received the trees from the Rivers nurseries. In shipping the trees to Florida the label was lost. When these trees fruited Mr. Hart exhibited samples of the fruit at a meeting of the Florida State

[1] Letter from Mr. William Wood, Los Angeles, Cal., Jan. 5, 1916.

[2] Letter from Mr. George Frost, Riverside, Cal., Jan. 20, 1916.

[3] Statement received from Mr. Daniel Houston, Zellwood, Fla., May 9, 1916. Mr. Houston was formerly manager of General Sanford's properties.

[4] Letter of Mr. E. H. Hart to Prof. E. H. Van Deman, U. S. Department of Agriculture, Apr. 25, 1888.

Horticultural Society and the nomenclature committee of that society gave them the name Hart's Tardiff, which was successively changed to Hart's Tardy and Hart's Late. The American Pomological Society has adopted the name Hart for this variety, but the names mentioned above are still in common use by nurserymen and growers in Florida. On comparison, the fruits of the Hart introduction were found to be identical with those grown by General Sanford under the name Brown.[1] Budded trees of both the Sanford and Hart introductions were included in the earlier shipments of trees from Florida to California.[2] It was soon found, however, that the Brown, Hart, and Valencia were the same variety, and as it seemed probable that the California Valencia Late and the Florida introductions were nearly related and came from the same original source, the name Valencia is used in California to designate all trees which have descended from these different introductions. Orchards grown from trees or buds received from these sources show only minor differences, if any, and when present these are of such a character as may be due to local soil and climatic conditions rather than to inherent varietal differences. As a rule, the Chapman introduction of Valencia orange has a more globular shape than the Florida strains and is said to ripen somewhat earlier. The Chapman trees usually are more upright in habit of growth than those of the Florida Valencia, but not enough reliable information is available regarding this or other comparative varietal tree and fruit characters of these introductions for any final conclusions as to inherent differences between them.

The performance records of individual trees and the observations, illustrations, and notes of trees and fruits contained in this bulletin have all been obtained from trees which trace back to the Florida introductions now commonly known in California as the Valencia orange. These records and observations have been made in the orchards of southern California and for the most part in those located in Riverside County.

VARIABILITY WITHIN THE VARIETY.

Previous to this study it had been generally supposed that one Valencia tree was as good as another and that for a series of years they would produce practically equivalent crops. Contrary to this, these investigations have proved that instead of the Valencia variety being stable and constant, it is composed of several distinct strains which differ from each other in many characters of fruit and tree. The term "strain" is used here to designate a group of individuals of a horticultural variety which differ from all other indi-

[1] Letter of Mr. E. H. Hart to Prof. E. H. Van Deman, U. S. Department of Agriculture, June 10, 1887.
[2] Statement received from Mr. Daniel Houston, Zellwood, Fla., May 9, 1916.

viduals of the variety in one or more constant and recognizable characteristics and which are capable of perpetuation through vegetative propagation. Within the various strains there are variations in the amount and commercial quality of the fruits produced by the individual trees. The variability of individual-tree production in the orchard as regards quantity, commercial quality, time of ripening, and other characteristics is of the highest importance to growers of fruit varieties.

The variability of the trees and fruits within the variety is of fundamental significance from the standpoint of the grower and in any study of the conservation and stabilization of the variety as a whole.

The Valencia strains are distinguished by differences in habits of growth, time of ripening fruits, quantity and quality of crops, and other definite and marked characteristics. The trees of certain strains were found to have upright habits of growth, while those of other strains are drooping or spreading. The trees of some of the strains produce, as a rule, full crops of the best-grade fruit, while those of other strains produce light crops of low-grade fruit. The trees of at least one of the strains produce early-ripening crops, while those of other strains produce later ripening fruits. The leaves of the trees of some of the strains are large, broad, and bluntly rounded in shape, while trees of other strains have small, narrow, and sharply pointed leaves.

In many cases, fruits of two or more of the different strains have been found on the same tree grown from a single bud and therefore upon the same individual stock. Such instances have shown the fallacy of the theory that the different strains are variations due to climatic or soil conditions or the influence of different stock. Later, it was found that the different strains occurring in a single tree could be isolated through bud selection in propagation, thus proving that the differences observed were true inherent cases of bud variation.

The mixture of strains in the Valencia orchards under observation was found to be so marked and frequent as to warrant careful investigations of their relative value. The results of these investigations, which have covered more than four years, together with suggestions for the isolation of the best strains of this variety through bud selection and for the stabilization of the variety through the propagation of only the most desirable strains, are set forth in the following pages.

OCCURRENCE AND FREQUENCY OF BUD VARIATIONS.

A casual observation of the Valencia orange trees selected for these investigations will reveal little of the startling condition of bud variability existing in the trees and their fruits. Several Valencia orange growers, with many years of experience in the culture of this

variety, have expressed genuine surprise when some of the bud variations of foliage and fruits occurring on their trees have been pointed out to them. As a matter of fact, while bud variations have been known to exist in trees of this variety for some time, their frequency and importance have not been fully realized until very recently and as a result of these investigations.

Twelve important strains of the Valencia variety have been found and described during these investigations. Several other minor and less frequent variations have been found from time to time, but, so far as is now known, they are of little significance or importance in commercial orchard practice or in the present studies.

The total number of strains existing in the Valencia variety is not known. Additions are continually being made to the list, as knowledge of the variety grows and the extent of the investigations widens to include observations of a larger number of trees.

The extent of the occurrence of diverse strains of the Valencia variety in established bearing orchards has been found to be even greater than the occurrence of similar variations in Washington Navel groves. The percentage of off-type trees, i. e., marked variations from the best or Valencia strain, found in individual commercial orchards is practically the same as was found in Washington Navel orange orchards (from about 10 to approximately 75 per cent),[1] but a larger proportion of the Valencia orchards have shown the higher percentages of trees of variable strains.

The name Valencia has been applied to the best strain of the variety, because, as nearly as can be determined, it is similar in type of tree and of fruit to the original Valencia introductions into California which were propagated on account of their superior quality and productiveness. This strain bears the heaviest crops and the most desirable fruits of any of the strains of this variety under observation. It is the strain upon which the reputation of the variety has been founded and which under present conditions is the most desirable for cultivation in California.

As a rule, the younger Valencia orchards show a larger proportion of trees bearing inferior fruits than the older orchards. This condition indicates that the prevailing methods used in propagating this variety have resulted in the perpetuation of an increasingly large proportion of trees of undesirable strains.

OBJECTS OF THE INVESTIGATIONS.

The objects of the investigations reported in this bulletin are (1) to ascertain the variations which have taken place in the Valencia orange through bud variation and to learn the comparative value of

[1] Shamel, A. D., Scott, L. B., and Pomeroy, C. S. Citrus-fruit improvement: A study of bud variation in the Washington Navel orange. U. S. Dept. Agr. Bul. 623, 146 p., 16 fig., 19 pl. 1918.

the different strains for commercial fruit production; (2) to determine the extent to which undesirable variations have been propagated, as shown by the percentage of such inferior trees in the present bearing groves; and (3) through improved methods of propagation to control the extent to which undesirable variations in the future shall enter into the population of commercial Valencia orange groves. Briefly stated, these investigations have been undertaken for the purpose of discovering practical methods for conserving and stabilizing the Valencia orange variety.

PLAN OF THE INVESTIGATIONS.

The investigations have been carried on by means of individual-tree performance records and observations.

The term "performance record" is here used to designate the record of the quantity and the commercial quality of the fruits borne by an individual tree during one or more years.

The term "performance-record plat" as used in these investigations means a group of trees grown under comparable conditions and selected for the purpose of determining the relative behavior of the trees by means of individual-tree records of production, observations, and descriptive notes.

The primary conditions considered in the location of the performance-record plats of Valencia oranges in which the investigational work was conducted were (1) full-bearing trees planted on virgin land, so as to eliminate all possible influence of previous soil or cultural conditions; (2) uniform soil where little or no fertilizers of any kind had been applied and where uniform cultural treatments had been practiced from year to year; (3) the absence of any radical pruning or other tree treatment; (4) the absence or effective control of insect enemies and diseases; (5) trees in a normal, healthy condition, showing satisfactory vegetative growth; (6) a knowledge of the character of the stocks and the sources of the buds used in propagation; (7) sufficient elevation to assure natural protection from frost and other unfavorable conditions; and (8) the prospect of the control of the orchard by the same owners for a series of years.

These conditions, particularly those of soil and culture, are not conducive to large yields, but are favorable to the study of inherent individual-tree variability and behavior. As the object of these investigations is not the measurement of the highest possible yield or the study of the influence of cultural conditions on the production of large crops, but rather the behavior of trees under conditions as nearly natural as it is possible to secure in commercial citrus orchards in California, it was deemed wise in this selection to eliminate so far as practicable all local environmental influences and abnormal conditions.

The principal plats of Valencia oranges finally selected for individual-tree performance-record work are located in a citrus orchard of approximately 750 acres about equally divided between Valencia oranges, Washington Navel oranges, and Eureka lemons. A study of all the Valencia trees on this ranch was made before the plats of trees for detailed observation were finally selected. This selection was made with the idea of securing a representative lot of trees which would include typical trees of some of the most important strains of the variety. Trees to the number of 115 which had been planted in the fall of 1903 were selected. Actual performance-record work was begun in 1912. Complete annual records secured from 105 of these trees for four successive years are available for study. Later in 1912 a plat of 9 trees of the Valencia strain was selected in another Valencia orchard several miles distant, where soil conditions are markedly different. In 1914 an additional plat of 55 trees was chosen in the same orchard where the first plat was located, mainly for the purpose of studying the individual-tree behavior of the Valencia or best strain of the Valencia variety. In this publication the discussion of results will be confined to those secured from the records obtained from the plat first selected.

METHODS OF KEEPING PERFORMANCE RECORDS.

In securing the individual-tree performance records for investigational purposes[1] each tree is given a number, and the trees in the plats are marked annually with cloth streamers to prevent their being picked accidentally by the regular picking crew of the ranch. Each tree is picked separately, and all notes concerning the quantity and quality of fruit borne by that tree are recorded before the picking of the next tree is begun.

The fruits are assorted into three grades: (1) An Orchard grade, including all of the valuable first-class commercial fruits; (2) a Standard grade, including marked, misshapen, unevenly colored, or other blemished fruits which are distinctly of a second class in commercial quality, but still worthy of marketing; and (3) a Cull grade, consisting of fruits of such inferior quality as to be wholly unfit for the market. By means of a small mechanical sizer, similar to those in actual use in orange-packing houses, the fruits in the Orchard and Standard grades are sized into the commercial sizes varying from 288 to 80. The fruits of each size in each grade are counted and weighed and the notes recorded on forms arranged especially for this

[1] For a complete description of the methods followed in securing the investigational performance records see the following publication: Shamel, A. D., Scott, L. B., and Pomeroy, C. S. Citrus-fruit improvement: A study of bud variation in the Washington Navel orange. U. S. Dept. Agr. Bul. 623, 146 p., 16 fig., 19 pl. 1918.

Directions for securing performance records as a part of commercial orchard picking operations are presented in the following publication: Shamel, A. D. Citrus-fruit improvement: How to secure and use tree-performance records. U. S. Dept. Agr., Farmers' Bul. 794, 16 p., 4 fig. 1917.

purpose.[1] The culls are not sized, but their number and weight are recorded.

The field notes are transferred to annual record sheets, illustrations of their use being shown in the upper part of section A of Table III, and these notes in turn are transferred to period record sheets, illustrations of the use of which are shown in other parts of the same table. Thus the record of each tree is assembled in one place for comparative study.

DESCRIPTIONS OF SOME OF THE IMPORTANT STRAINS.

In addition to the performance records, as opportunity permits descriptive notes are secured of typical trees and fruits of the different strains. Inasmuch as the greatest commercial importance lies in the character of the fruits, the main emphasis in these records is placed upon the characteristics of the fruits of the important strains and their relative commercial value.

Brief descriptions of some of the important Valencia strains arising from bud variations which have been found in the investigational performance-record plats are here given.

VALENCIA STRAIN.

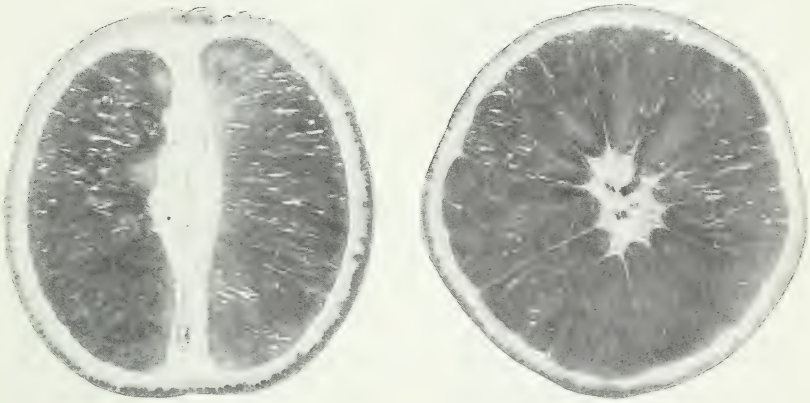
The trees of the Valencia strain vary considerably in regularity of production and as a whole may be divided into three general classes: (1) Regular producers, (2) alternate-season producers, and (3) irregular producers, bearing full crops only at infrequent intervals. This condition indicates that the Valencia strain as here considered is probably made up of several minor strains, which upon further investigation may be classed among the major strains. The trees, as a rule, have an erect and spreading habit of growth, developing open heads with large rounded leaves.

The typical fruits of this strain, illustrations of which are shown in Plate I, are globular, with a tendency to flattened blossom ends; size medium; texture of skin smooth; color bright orange; rind thin; rag tender; juice abundant and sweet; seeds from none to 10, averaging in these observations about 3 per fruit. The fully ripened fruits have a good quality, inferior only to that of the Washington Navel orange among California citrus fruits. Under certain climatic conditions the ripe fruits on the trees are likely to start a new growth, resulting in the fruits turning green in color. This second development of green color is likely to disappear after picking, and its loss can be hastened by increasing the temperature and humidity conditions of the stored fruits.

[1] Shamel, A. D. Citrus-fruit improvement: How to secure and use tree-performance records. U. S. Dept. Agr., Farmers' Bul. 794, tab. 1, pp. 10–11. 1917.

P13639HP

FIG. 1.—SIDE VIEWS SHOWING THE CHARACTERISTIC TEXTURE OF THE RIND.

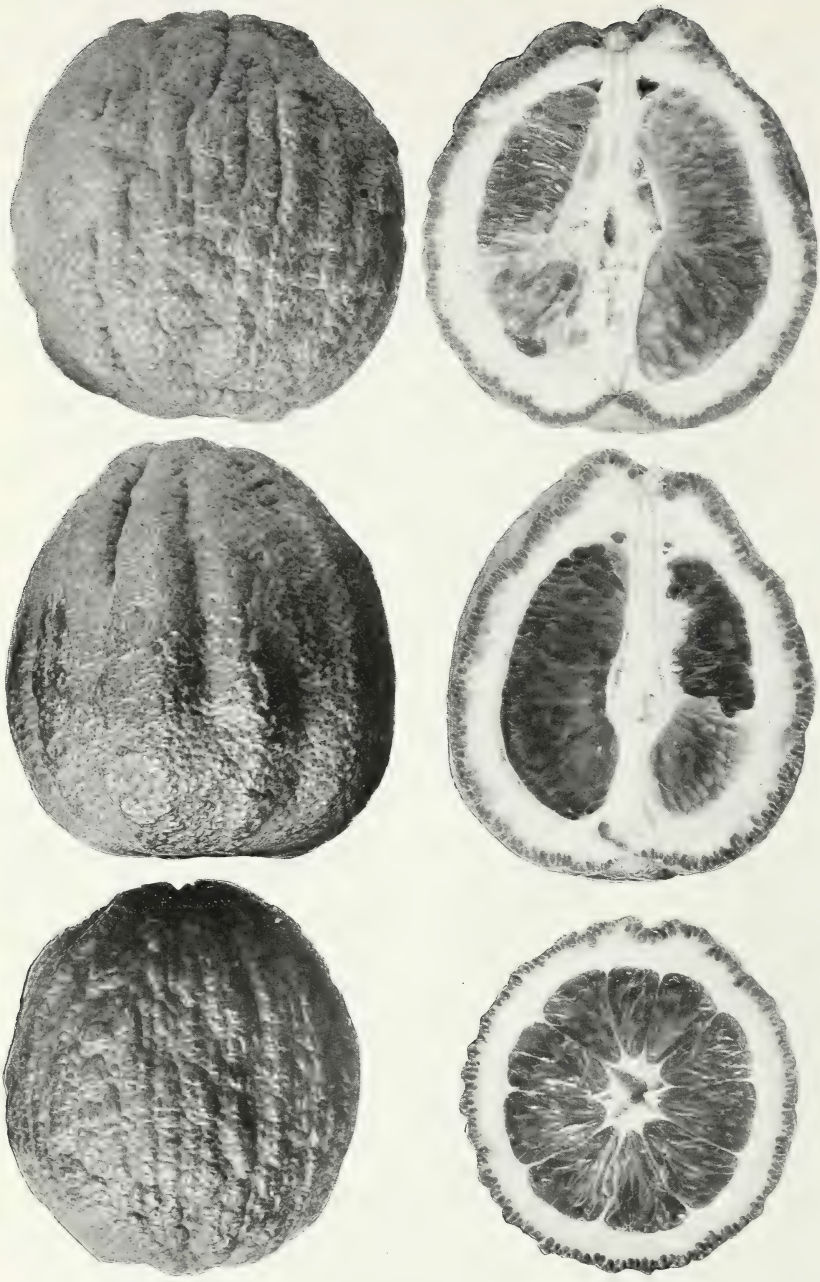


P13640HP

FIG. 2.—AXIAL AND CROSS SECTIONS OF THE SAME FRUITS.

TYPICAL FRUITS OF THE VALENCIA STRAIN OF THE VALENCIA ORANGE.

(About three-fourths natural size.)



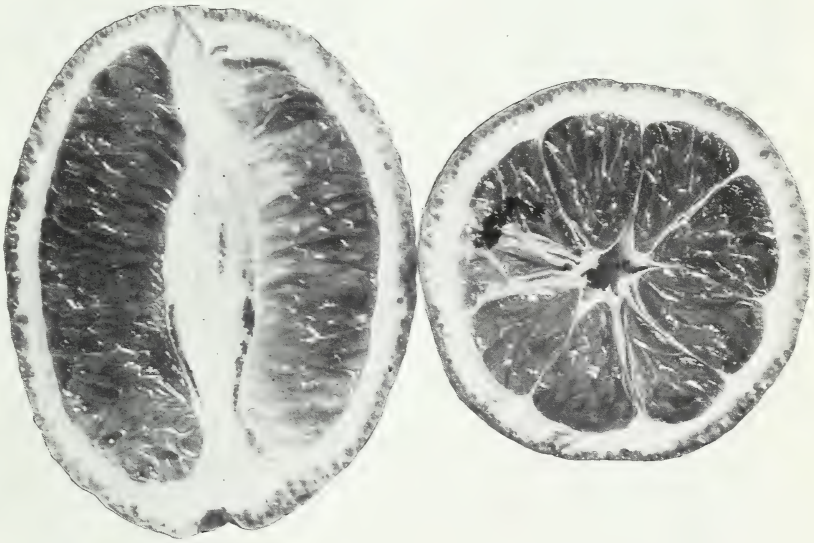
P240A–HP AND P241A–HP

TYPICAL FRUITS OF THE CORRUGATED STRAIN OF THE VALENCIA ORANGE. TWO VIEWS ARE SHOWN OF THREE FRUITS.

(About two-thirds natural size.)

P9137HP

FIG. 1.—SIDE VIEW OF THE FRUITS, SHOWING THEIR CHARACTERISTIC CYLINDRICAL SHAPE.



P9138HP

FIG. 2.—CROSS AND AXIAL SECTIONS OF THE SAME FRUITS.

TYPICAL FRUITS OF THE LONG STRAIN OF THE VALENCIA ORANGE.

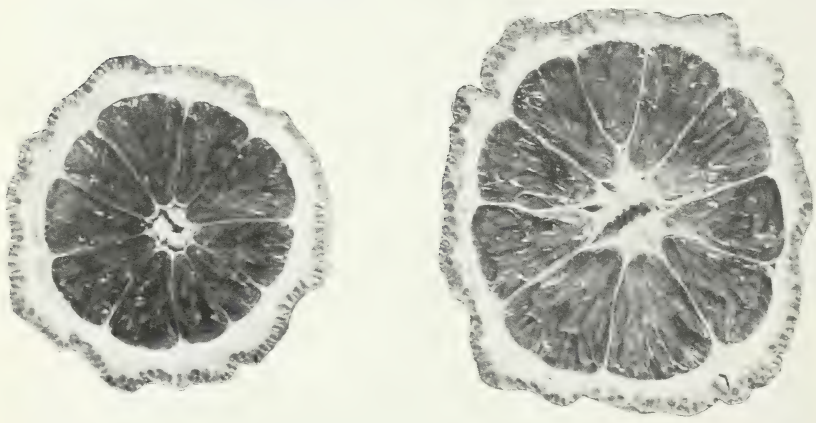
(About four-fifths natural size.)

P9122HP

FIG. 1.—SIDE VIEW, SHOWING THE SHAPE OF THE FRUIT AND ITS CHARACTERISTIC RIBBED SURFACE.

P9121HP

FIG. 2.—ENDS OF THE SAME FRUITS.



P9123HP

FIG. 3.—CROSS SECTIONS OF THE SAME FRUITS.

TYPICAL FRUITS OF THE RIBBED STRAIN OF THE VALENCIA ORANGE.

(About nine-tenths natural size.)

CORRUGATED STRAIN.

The trees of the Corrugated strain are not so productive, as a rule, as those of the Valencia strain. They have a drooping habit of growth, and the leaves are usually smaller than those of the Valencia strain and are sharply pointed.

The typical fruits, as shown in Plate II, are oblong or cylindrical; size usually large; texture of skin very rough, corrugated; rind thick; color greenish; rag tough; juice scant, of poor quality and flavor; seeds averaging 2 or 3 per fruit; in fact, these fruits are not worth shipping to eastern markets, but in these investigations they have been included in the standard grade for this variety. This strain, however, is one of the most interesting in the variety for purposes of studying the behavior of bud mutations in citrus fruits.

LONG STRAIN.

The habit of growth and foliage characteristics of the Long strain are similar to those of the Valencia strain, but the trees are less productive.

The fruits, as shown in Plate III, are cylindrical and much longer than those of other strains; size, as measured by cross diameter, small to medium; texture smooth; color bright orange; rag tender; juice abundant, sweet, of good quality; seeds averaging 1 or 2 per fruit. The peculiar shape of these fruits makes them unsuitable for packing and marketing under prevailing conditions. This strain frequently occurs as limb sports in trees of the Valencia strain.

RIBBED STRAIN.

The trees of the Ribbed strain are usually very irregular in production, bearing full crops some seasons, followed by several seasons of very light production. The habit of growth is usually drooping, and the foliage is sparse, the leaves being small and sharply pointed.

The typical fruits, as shown in Plate IV, are globular, sometimes somewhat flattened on both stem and blossom ends; size small; texture coarse; color pale yellow; rind thin to medium; rag tender; juice abundant, inferior in quality and flavor to that of the fruits of the Valencia strain; seeds averaging 2 per fruit. The ribbed character of the rind gives the fruits a striking appearance, but it detracts from their commercial value under prevailing market conditions.

YELLOW STRAIN.

The productiveness of the trees of the Yellow strain is about the same as those of the Ribbed strain, except that they show a tendency to more regularity of annual production. The habit of growth is spreading and drooping. The foliage is of medium density, the leaves being medium in size and sharply pointed.

The typical fruits, as shown in Plate V, are globular; size small; texture very smooth; color deep yellow; rind very thin; rag very tender; juice abundant, very sweet; seeds averaging 1 per fruit. Frequently the skins of these fruits have small spots or streaks of red, as is the case with the fruits of the Yellow strain of the Washington Navel orange. On account of the small size and yellow color of the fruits, they are inferior to fruits of the Valencia strain for commercial purposes under prevailing conditions. These fruits usually ripen about one month earlier than those of the Valencia strain, and for this reason may prove to be of value for some climatic and soil conditions. They are very frequently found as limb sports in trees of the Valencia or other strains.

SMOOTH STRAIN.

The trees of the Smooth strain are much less productive than those of the Valencia strain, and have an upright, spreading habit of growth. The foliage and other tree characteristics are similar to those of trees of the Valencia strain.

The fruits, illustrations of which are shown in Plate VI, are usually somewhat smaller than the fruits of the Valencia strain, but have about the same shape; texture of skin very smooth, resembling in appearance that of fruits of the Smooth strain of the Washington Navel orange; color reddish orange; rind very thin; rag tender; juice abundant, sweet; seeds averaging 2 or 3 per fruit. This strain is promising as a valuable addition to the orange strains in California when isolated and improved by bud selection. It is frequently found as a limb sport in trees of the Valencia strain.

BARREN STRAIN.

The trees of the Barren strain show more than ordinary vegetative vigor, are very unproductive, and have a drooping habit of growth and very finely branched, dense foliage. The leaves are usually small, narrow, and very sharply pointed. One interesting condition of tree behavior in this strain is the tendency to produce an unusually large number of flowers during the blooming period.

The typical fruits occasionally produced by some trees of this strain, as shown in Plate VII, are flattened in shape, usually with a wrinkled appearance around the stem; size small; texture coarse; color yellowish orange; rind very thick; rag excessive, tough; juice scant, of very inferior quality; seeds averaging 1 or 2 per fruit. On account of its low production and the inferior commercial quality of its fruits, this strain is absolutely worthless. It is occasionally found as a limb sport in trees of the Valencia strain.

ROUGH STRAIN.

The trees of the Rough strain show more than ordinarily vigorous vegetative growth, with a tendency toward the production of a large number of suckers or abnormal branches, and bear smaller crops than trees of the Valencia strain. The habit of growth is usually upright and the foliage dense with large leaves. The large proportion of trees of this strain found in some Valencia orchards is probably due to the use of sucker growth in propagating the trees.

The typical fruits, as shown in Plate VIII, are globular; size large; texture coarse and rough; color yellowish orange; rind thick; rag tough; juice medium in quantity and quality; seeds averaging 2 or 3 per fruit. On account of the inferior appearance of these fruits they are of much less commercial value than those of the Valencia strain. They are occasionally found as limb sports in trees of the Valencia strain.

SPORTING STRAIN.

The trees of the Sporting strain are very variable in habit of growth and production, are usually of more than ordinarily vigorous vegetative growth, and have rather dense foliage. The leaves are extremely variable in size and shape.

The fruits, examples of which are shown in Plate IX, vary in a manner similar to the tree characteristics and frequently include examples of all of the observed strains of the variety and an unusual number of other forms, such as those showing raised or sunken sections, or both, sections of different strains of the Valencia oranges, peculiar ridges or depressions, and abnormal shapes. Usually but few fruits of the Valencia strain are borne by these trees, and on the whole, their crops are of very inferior value from a commercial standpoint.

FLAT STRAIN.

The trees of the Flat strain are comparatively unproductive, with an erect habit of growth and sparse foliage. The leaves are usually small and sharply pointed.

The typical fruits of this strain, as shown in Plate X, are distinctly flattened at both the stem and blossom ends, giving them a very characteristic appearance; size medium; texture coarse; color yellowish orange; rind thick; juice scant, of inferior quality; seeds averaging about 3 per fruit. On account of their shape, these fruits are not suitable for packing under prevailing conditions of marketing. This strain is frequently found as limb sports in trees of the Valencia strain.

NAVEL STRAIN.

The trees of the Navel strain have habits of growth and production similar to those of the Valencia strain. The foliage is usually rather dense; the leaves are small and rather pointed in shape.

The typical fruits, as shown in Plate XI, resemble the fruits of the Valencia strain in shape, size, and color, but differ from them in having a smoother texture of skin, thinner rind, more acid juice, fewer seeds, and a small, often rudimentary navel. This strain occurs occasionally as individual fruit and limb sports in trees of the Valencia strain. It has been isolated in commercial propagation and is grown to a limited extent under the name Navelencia orange. This strain is especially interesting from the fact that there is a possibility of isolating from it by bud selection a seedless strain of the Valencia variety.

WILLOW-LEAF STRAIN.

The trees of the Willow-Leaf strain have spreading and drooping habits of growth, very narrow, willowlike leaves, and produce infrequent, light crops of fruit.

The typical fruits, as shown in Plate XII, are somewhat flattened; size usually small; color yellowish; texture of skin very coarse; rind thick, ridged, and uneven; rag coarse; juice scant, of poor quality; seeds averaging about 2 per fruit. This strain, while one of the most interesting bud variations found in this variety, is absolutely worthless for commercial purposes.

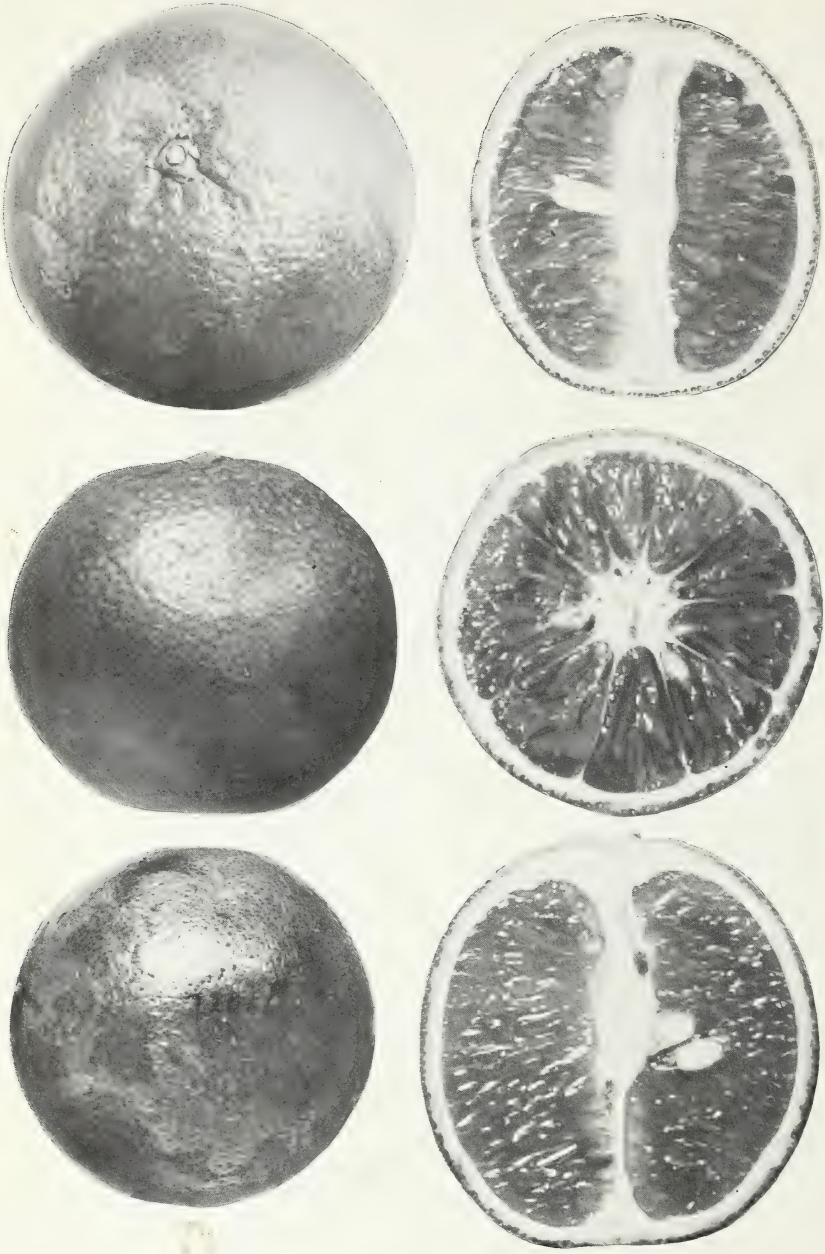
INDIVIDUAL VARIATIONS OF FRUITS.

The individual fruit variations found in trees of many of the Valencia orange strains are of fundamental importance in considering the origin of the various strains and their widespread distribution in young orchards. Under normal conditions a twig originating as a bud variation and bearing only a single variable fruit will in a few years develop into a large branch bearing the same character of fruit. In securing bud wood for propagation according to the methods which have prevailed in the past, no thought has been given to the possible occurrence in the trees of branches bearing fruits of variable strains, and as a result among trees so propagated there is usually found a considerable proportion of variable ones. On account of this previous lack of knowledge of the existence of variable strains, the percentage of such variable-strain trees in the population of any locality has been greatly increased with each bud generation. This fact is one of the most important reasons for securing individual-tree performance records and using such records as guides in the selection of trees from which to obtain bud wood for propagation.

P9379HP

TYPICAL FRUITS OF THE YELLOW STRAIN OF THE VALENCIA ORANGE, SHOWING ITS SHAPE, THE THICKNESS AND TEXTURE OF THE RIND, AND OTHER CHARACTERISTICS.

(About three-fourths natural size.)



P1018A–HP AND P9295HP

TYPICAL FRUITS OF THE SMOOTH STRAIN OF THE VALENCIA ORANGE.

(About four-fifths natural size.)

P1148HP

TYPICAL FRUITS OF THE BARREN STRAIN OF THE VALENCIA ORANGE, SHOWING THE CHARACTERISTIC COARSE TEXTURE OF THE RIND AND ONE VARIABLE FRUIT.

(About three-fifths natural size.)

P9376HP

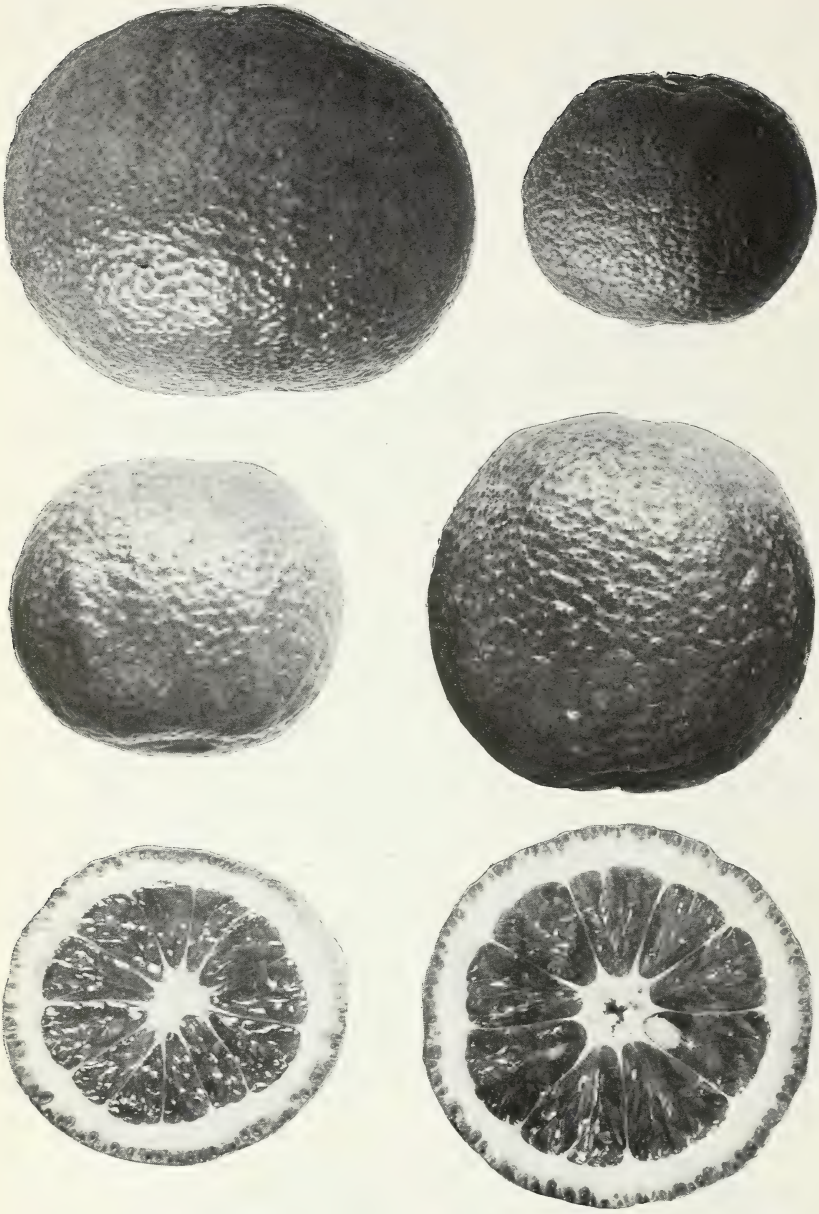
TYPICAL FRUITS OF THE ROUGH STRAIN OF THE VALENCIA ORANGE.

(About three-fifths natural size.)

P221A—HP

FRUITS OF THE SPORTING STRAIN OF THE VALENCIA ORANGE, ALL BORNE ON ONE TREE GROWN FROM A SINGLE BUD.

1, Valencia strain; 2, Rough strain; 3, Flat strain; 4, Flat strain, corrugated; 5, Long strain; 6, Sunken section; 7, Raised section; 8, Ribbed strain; 9, Ridged section. (One-half natural size.)



P238A–HP, P1196A–HP, AND P1199A–HP

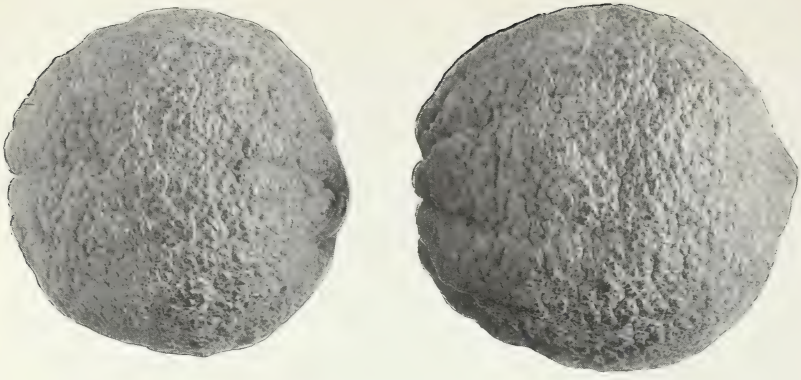
TYPICAL FRUITS OF THE FLAT STRAIN OF THE VALENCIA ORANGE.

(About four-fifths natural size.)

P134A–HP

TYPICAL FRUITS OF THE NAVEL STRAIN OF THE VALENCIA ORANGE.

(About four-fifths natural size.)

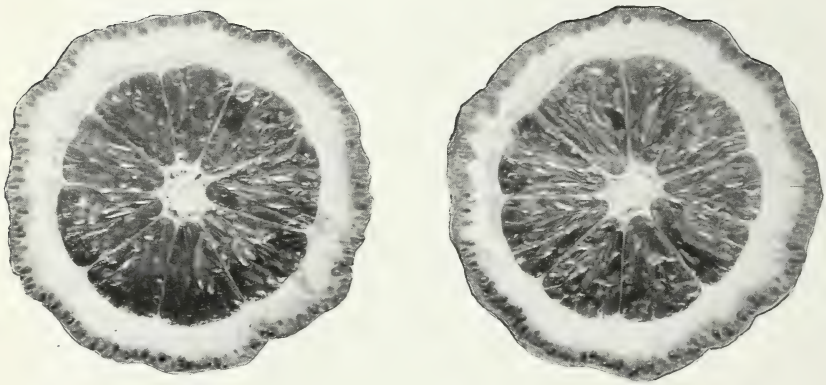


P214A–HP

FIG. 1.—SIDE VIEWS, SHOWING THE COARSE, ROUGH TEXTURE OF THE RIND.

P213A–HP

FIG. 2.—END VIEWS OF THE SAME FRUITS.

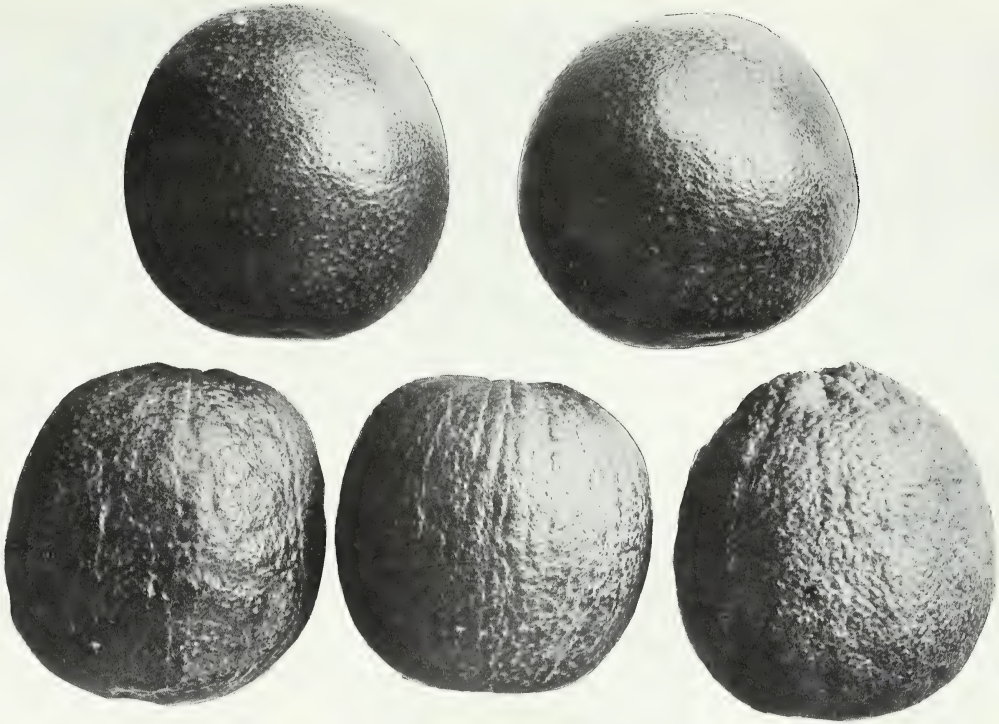


P215A–HP

FIG. 3.—CROSS SECTIONS OF THE SAME FRUITS.

TYPICAL FRUITS OF THE WILLOW-LEAF STRAIN OF THE VALENCIA ORANGE.

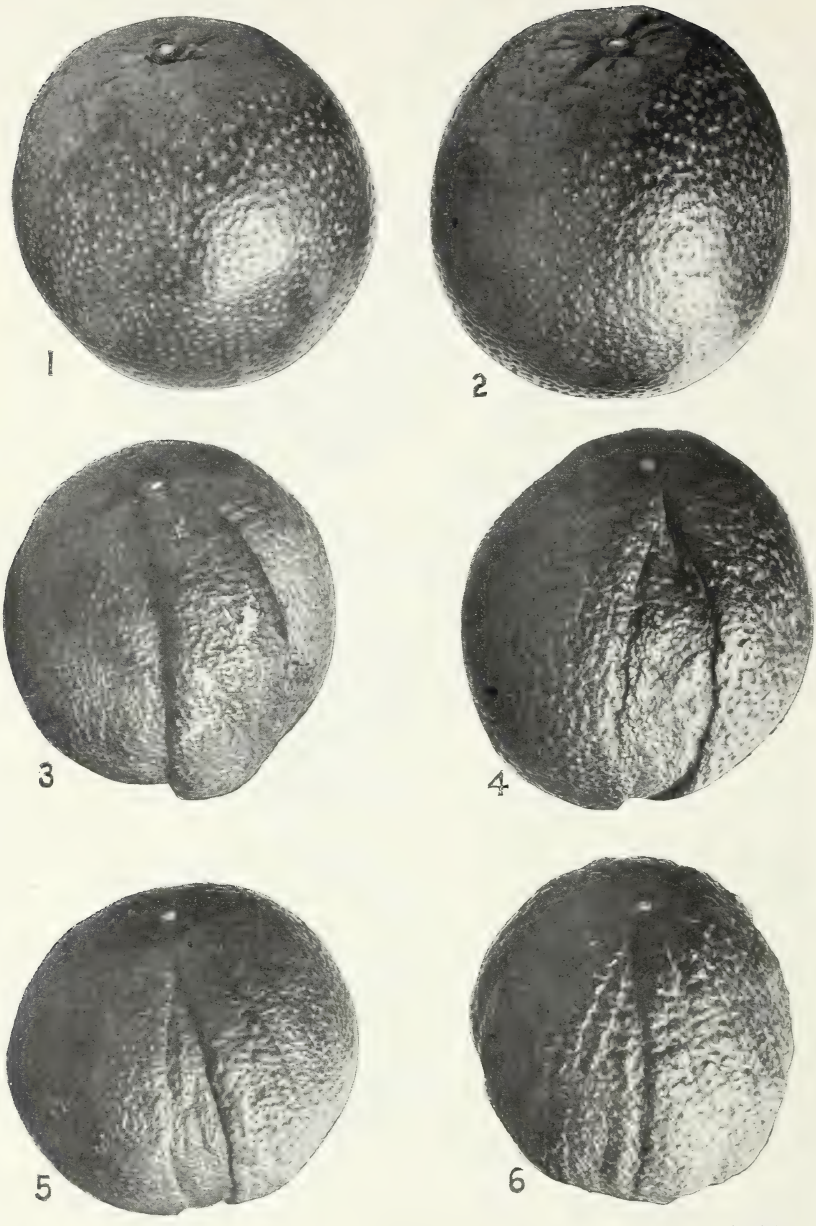
(About two-thirds natural size.)



P1174A–HP

TYPICAL FRUITS OF THE VALENCIA AND ROUGH STRAINS OF THE VALENCIA ORANGE BORNE ON ONE TREE GROWN FROM A SINGLE BUD.

The Rough-strain fruits were produced on a sporting limb, the remainder of the fruits on the tree being typical Valencia strain in character. (About three-fifths natural size.)



P458A–HP

MINOR VARIATIONS OF FRUITS BORNE ON A TREE OF THE VALENCIA STRAIN GROWN FROM A SINGLE BUD.

1 and 2, Valencia strain; 3, Raised section; 4, Sunken section; 5, Raised and Sunken sections; 6, Rough strain. (About seven-tenths natural size.)

Fruits arising from bud variations may occur as individual fruits, or collectively on a single branch, or on several branches of a single tree. Plate XIII shows fruits of the Rough strain which were borne on a sporting limb in a Valencia strain tree. The degree of fruit variability considered in this connection, while often of importance commercially, is usually not sufficient for varietal distinction. It may be illustrated by the variability of fruits in the Washington Navel orange where the variations under observation are well marked and commercially distinct but all of the fruits possess the characteristic navel. These strains possess characteristics which have been found to be capable of isolation through bud selection in propagation. The differences in the characteristics of the fruit variations in some of the different strains are of an importance from the commercial standpoint almost equal to those which differentiate the horticultural varieties of the citrus fruits.

The number of major fruit variations borne by individual Valencia trees in the performance-record plats differs greatly. A few trees have been found in the performance-record plats without any apparent or marked variations in fruits other than the usual modifications of size, shape, texture of rind, color, or quality which are probably due to the influence of environmental conditions. In some trees one or only a few variable fruits have been found. In others, several fruits of each of the 12 distinct strains have been found borne by one tree grown from a single bud. In some trees one of the main branches occasionally is found to bear fruit of several distinct strains, but as a rule single large off-type branches bear fruits of the same general character.

MINOR VARIATIONS OF FRUITS.

A great many minor variations have been found from year to year in some of the performance-record trees. A single fruit often shows sections or segments characteristic of two or more distinct strains of the variety. Others show large raised or sunken sections, or both, in the same fruit, examples of which are shown in Plate XIV. Many abnormal fruits, particularly in shape, have been found and described. Twin fruits, and those showing several divisions, each a complete orange in itself, have been found occasionally.

A careful study of these differences arising from bud variations is being made with the hope that the results will throw some light upon the problems of heredity in citrus varieties.

LESSONS TAUGHT BY THESE INVESTIGATIONS.

The tables and diagrams presented herewith are all prepared from records covering the 4-year period, 1912 to 1915, inclusive, secured from 105 trees in a grove which was planted in the fall of 1903. In

this plat there are typical trees of 8 of the 12 most important strains of the Valencia variety and 3 of the minor strains, as follows: 75 Valencia strain trees; 8 Unproductive; 7 Corrugated; 3 Sporting; 3 Coarse; 2 Rough; 2 Smooth; 2 Barren; 1 Long; 1 Yellow; and 1 Small Yellow. Examples of the other 4 important strains and several minor variations occur as bud and limb sports in many of the trees. Although this plat is not an example of extreme variation of strain in established orchards, it is interesting to note that only 71 per cent of the trees in it are of the Valencia strain. Groves have been observed which were found to contain as large a percentage, and in some extreme cases more than this proportion, of trees other than those of the Valencia strain.

The accompanying performance records, descriptions, and illustrations only partially present the characteristics of the various strains. The real differences of the trees and fruits must be seen and studied personally before they can be fully appreciated and their importance in commercial fruit growing understood. For this same reason, the selection of trees from which to secure bud wood for propagation should not be made on the basis of the performance records of the trees alone. It is most desirable that the final choice be made in the orchards with the performance records in hand by someone who through close study and observation of the trees themselves has gained an intimate knowledge of the interrelation of tree characteristics and crop production.

PRESENTATION OF DATA.

The complete 4-year performance records of the 105 trees on which comparable data have been secured are presented in Table I. This shows the production by weight and number of fruit of each grade and size for each year and the annual average production for the 4-year period. The basis of ranking the trees in this table is the average annual total crop of each tree, expressed in pounds and ounces, without regard to the grade, quality, or uniformity of the fruit. Hence, the position of any particular tree in this table is not necessarily a true index of what its relative position would be if the classification were made on the basis of the commercial value of its fruit. The impossibility of making an accurate classification of a large number of trees on the basis of the comparative quality of the fruits and the desirability of the individual trees is the reason for the adoption of the weight of the average annual crop as a basis in preparing this table.

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive.*

[The weights of annual production are expressed in pounds and ounces, but the fractional averages are expressed decimally in pounds. The fruits of the Standard grade from the trees of the Corrugated and Rough strains were not sized in the years 1912 and 1913.]

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
1, tree No. 23-87-1, Valencia strain:																								
Orchard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	144 10	343	3 12	14	15 10	48	13 15	38	45 1	109	31 12	69	28 1	55	0 8	1	2 7	4	3 8	5	0 0	0	0	....
1913	122 5	407	43 10	177	41 5	133	13 15	40	17 14	45	3 2	7	2 7	5	0 0	0	0 0	0	0 0	0	0 0	0	1.67	....
1914	165 9	458	50 1	168	49 3	137	38 12	95	16 14	37	8 10	17	2 1	4	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	176 11	529	23 3	87	40 2	133	45 8	135	52 11	139	12 13	30	2 6	5	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
Average	152.3	434	30.2	112	36.6	113	28.0	77	33.1	83	14.1	31	8.7	17	0.1	0.3	0.6	1	0.9	1	0	0	2.59	....
Standard grade—																								
1912	61 2	141	1 7	5	4 7	13	8 0	21	15 11	36	11 0	23	15 3	29	1 1	2	7 5	12	0 0	0	0 0	0	1.33	....
1913	27 9	120	21 6	101	4 7	14	1 12	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.33	....
1914	25 13	74	8 2	32	5 1	15	2 14	8	2 8	6	1 7	3	2 11	5	0 10	1	2 8	4	0 0	0	0 0	0	4.67	....
1915	27 11	96	10 5	43	9 6	31	5 2	15	2 6	6	0 0	0	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
Average	36.3	108	10.8	45	5.8	18	4.4	12	5.1	12	3.1	7	4.8	9	0.4	0.8	2.5	4	0	0	0	0	3.25	....
Cull fruits—																								
1912	9 8	24																					1.67	....
1913	5 6	58																					2.67	....
1914	1 8	13																					0	....
1915	4 10	25																					3.33	....
Average	5.3	30																					1 92	....
Total crop—																								
1912	218 4	508	5 3	19	20 1	61	21 15	59	60 12	145	42 12	92	43 4	84	1 9	3	9 12	16	3 8	5	0 0	0	1.00	11
1913	155 4	585	65 0	278	45 12	147	15 11	45	17 14	45	3 2	7	2 7	5	0 0	0	0 0	0	0 0	0	0 0	0	1.89	4
1914	192 14	545	58 3	200	54 4	152	41 10	103	19 6	43	10 1	20	4 12	9	0 10	1	2 8	4	0 0	0	0 0	0	2.78	45

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
1, tree No. 23-87-1, Valencia strain—Continued.																								
Total crop—Continued.	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz*			
1915	209 0	650	33 8	130	49 8	164	50 10	150	55 1	145	12 13	30	2 14	6	0 0	0	0 0	0	0 0	0	0 0	0	4.67	21
Average	**193.8**	**572**	**40.3**	**157**	**42.4**	**131**	**32.5**	**89**	**38.0**	**95**	**17.2**	**37**	**13.3**	**26**	**0.5**	**1**	**3.1**	**5**	**0.9**	**1**	**0**	**0**	**2.58**	20
2, tree No. 23-86-1, Valencia strain:																								
Orchard grade—																								
1912	61 13	135	1 8	6	4 2	13	3 10	10	12 2	29	12 9	27	15 15	31	2 3	4	2 15	5	6 13	10	0 0	0	0	....
1913	130 6	479	70 0	294	35 8	117	11 15	35	10 11	28	2 4	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	126 2	332	34 3	110	33 4	91	26 1	64	16 11	37	10 4	20	5 11	10	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1915	164 4	542	27 5	114	41 5	144	55 11	175	35 15	100	3 0	7	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
Average	120.6	372	33.3	131	28.5	91	24.3	71	18.9	49	7.0	15	5.7	11	0.5	1	0.7	1	1.7	3	0	0	2.92	....
Standard grade—																								
1912	55 1	118	1 5	5	2 12	8	8 12	23	9 2	21	7 2	15	13 10	25	1 1	2	11 5	19	0 0	0	0 0	0	1.33	....
1913	38 15	168	30 2	141	5 2	17	2 13	8	0 6	1	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1914	46 7	125	11 7	42	8 6	24	5 0	13	6 10	16	7 2	15	6 2	12	0 8	1	1 4	2	0 0	0	0 0	0	4.33	....
1915	58 14	229	37 11	161	16 8	55	3 7	10	1 4	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.00	....
Average	49.8	160	20.1	87	8.2	26	5.0	14	4.3	10	3.7	8	4.9	9	0.4	0.8	3.1	5	0	0	0	0	3.43	....
Cull fruits—																								
1912	16 12	35																					0	....
1913	6 15	52																					4.67	....
1914	2 4	13																					1.67	....
1915	5 1	23																					3.67	....
Average	7.8	31																					2.50	....

Total crop—																													
1912	133	10	288	2	13	11	6	14	21	12	6	33	21	4	50	19	11	42	29	9	56	3	4	6	14	4	24	6	13	10	0	0	0	.44	6
1913	176	4	699	100	2	435	40	10	134	14	12	43	11	1	29	2	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.22	8
1914	174	13	470	45	10	152	41	10	115	31	1	77	23	5	53	17	6	35	11	13	22	0	8	1	1	4	2	0	0	0	0	0	0	3.56	96
1915	228	3	794	65	0	275	57	13	199	59	2	185	37	3	103	3	0	7	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4.59	52
Average	**178.2**		**563**	**53.4**		**218**	**36.7**		**117**	**29.3**		**85**	**23.2**		**59**	**10.7**		**23**	**10.1**		**20**	**0.9**		**2**	**3.9**		**7**	**1.7**		**3**	**0**		**0**	**2.95**	**41**
3, tree No. 23-90-1, Valencia strain:																													
Orchard grade—																													
1912	111	1	228	0	4	1	1	11	5	1	14	5	21	1	51	20	14	46	43	9	84	5	12	10	10	13	18	5	3	8	0	0	0	.67	....
1913	111	4	353	30	13	118	38	15	124	21	15	62	17	2	44	0	8	1	1	15	4	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1914	133	14	372	36	4	120	44	11	125	34	6	86	16	1	36	1	7	3	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1915	127	5	401	23	9	87	39	2	130	37	9	112	24	14	67	1	4	3	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
Average	120.9		339	22.7		82	31.2		96	23.9		66	19.8		50	6.0		13	11.9		23	1.4		3	2.7		5	1.3		2	0		0	3.33	....
Standard grade—																													
1912	79	15	169	2	10	8	2	7	7	7	11	21	14	11	35	14	9	31	19	15	37	3	6	6	14	10	24	0	0	0	0	0	0	1.67	....
1913	43	1	177	30	0	135	8	3	28	4	7	13	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1914	25	14	81	10	8	40	6	5	19	3	2	9	3	6	8	1	7	3	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	53	6	189	17	6	70	24	6	85	9	6	28	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.97	....
Average	50.6		154	15.1		63	10.3		35	6.2		18	5.1		12	4.1		9	5.3		10	0.8		1.5	3.7		6	0		0	0		0	4.50	....
Cull fruits—																													
1912	14	13	33																										
1913	4	14	61																										
1914	3	10	19																										
1915	2	14	16																										
Average	6.5		32																										
Total crop—																													
1912	205	13	430	2	14	9	4	2	12	9	9	26	35	12	86	35	7	77	63	8	121	9	2	16	25	7	42	5	3	8	0	0	0	.89	0
1913	159	3	591	60	13	253	47	2	152	26	6	75	17	2	44	0	15	2	1	15	4	0	0	0	0	0	0	0	0	0	0	0	0	4.33	0
1914	163	6	472	46	12	160	51	0	144	37	8	95	19	7	44	2	14	6	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	3.78	3
1915	183	9	606	40	15	157	63	8	215	46	15	140	27	2	73	1	4	3	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	4.78	7
Average	**178.0**		**525**	**37.8**		**145**	**41.4**		**131**	**30.1**		**84**	**24.9**		**62**	**10.1**		**22**	**17.1**		**33**	**2.3**		**4**	**6.4**		**11**	**1.3**		**2**	**0**		**0**	**3.45**	**3**
4, tree No. 23-91-1, Valencia strain:																													
Orchard grade—																													
1912	114	3	252	0	4	1	5	11	17	8	14	24	25	12	63	24	8	54	32	4	64	3	14	7	11	12	20	1	4	2	0	0	0	2.67	....
1913	115	15	394	47	10	189	39	5	125	17	15	52	8	13	23	2	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1914	146	1	466	81	3	287	39	10	115	22	0	57	2	12	6	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.00	....
1915	107	12	339	20	1	75	32	4	106	32	3	96	20	4	55	2	8	6	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	6.33	....
Average	121.0		363	37.3		138	30.4		91	20.3		57	14.4		37	7.4		17	8.2		16	0.9		2	2.9		5	0.3		0.5	0		0	5.07	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
4, tree No. 23-91-1, Valencia strain—Continued.																								
Standard grade—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	83 6	191	2 10	9	5 12	18	9 9	26	16 12	40	18 6	40	23 15	47	3 5	6	3 1	5	0 0	0	0 0	0	0.67	....
1913	37 7	168	33 2	154	3 7	11	0 14	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1914	28 6	110	20 7	87	5 4	16	1 0	3	1 3	3	0 0	0	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	42 9	149	12 13	53	20 0	68	7 6	22	1 8	4	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	7.00	....
Average	47.9	154	17.3	76	8.6	28	4.7	14	4.9	12	4.8	11	6.1	12	0.8	2	0.8	1	0	0	0	0	4.02	....
Cull fruits—																								
1912	15 10	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	5 0	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
1914	3 6	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
1915	3 2	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.67	....
Average	6.8	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.92	....
Total crop—																								
1912	213 3	473	2 14	10	11 7	35	18 7	50	42 8	103	42 14	94	56 3	111	7 3	13	14 13	25	1 4	2	0 0	0	1.67	0
1913	158 6	616	80 12	343	42 12	136	18 13	55	8 13	23	2 4	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	0
1914	177 13	596	101 10	374	44 14	131	23 0	60	3 15	9	0 8	1	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.33	5
1915	153 7	504	32 14	128	52 4	174	39 9	118	21 12	59	3 6	8	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	7.00	7
Average	**175.7**	**547**	**54.5**	**214**	**37.8**	**119**	**25.0**	**71**	**19.3**	**49**	**12.3**	**27**	**14.3**	**28**	**1.8**	**3**	**3.7**	**6**	**0.3**	**0.5**	**0**	**0**	**4.33**	**3**
5, tree No. 23-86-4, Valencia strain:																								
Orchard grade—																								
1912	106 15	262	5 6	20	10 8	33	12 6	35	27 3	69	19 10	44	21 6	43	2 2	4	6 6	11	2 0	3	0 0	0	.33	....
1913	109 12	413	62 13	264	32 8	108	10 11	31	3 6	9	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
1914	156 4	438	46 1	148	63 1	175	36 0	90	9 12	22	1 6	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1915	144 1	437	6 2	24	34 1	117	51 3	157	44 13	121	6 15	16	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
Average	129.3	388	30.1	114	35.0	108	27.6	78	21.3	55	7.1	16	5.6	11	0.5	1	1.6	3	0.5	0.8	0	0	3.67	....

Standard grade—																																			
1912	34	0	80	2	13	10	3	5	10	5	2	14	4	3	10	6	9	14	8	7	16	0	10	1	2	15	5	0	0	0	0	0	0	.33	....
1913	23	0	137	25	2	129	2	3	6	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.00	....
1914	13	8	41	4	4	17	3	12	11	0	11	2	3	14	9	0	7	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	6.00	....
1915	89	15	254	21	12	82	31	12	100	16	8	46	5	8	14	4	6	10	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
Average	39.1		128	13.5		60	10.3		32	5.8		16	3.4		8	2.8		6	2.5		5	0.2		0.3	0.7		1	0		0	0		0	4.25	....
Cull fruits—																																			
1912	11	5	22																																
1913	7	9	74																															3.00	....
1914	1	14	9																															5.33	....
1915	1	5	8																															5.33	....
Average	5.5		28																															3.33	....
Total crop—																																		4.25	....
1912	152	4	364	8	3	30	13	13	43	17	8	49	31	6	79	26	3	58	29	13	59	2	12	5	9	5	16	2	0	3	0	0	0	1.22	0
1913	145	5	624	87	15	393	34	11	114	11	6	33	3	6	9	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	3
1914	171	10	488	50	5	165	66	13	186	36	11	92	13	10	31	1	13	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	5.11	7
1915	226	5	699	27	14	106	65	13	217	67	11	203	50	5	135	11	5	26	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4.22	17
Average	**173.9**		**544**	**43.6**		**174**	**45.3**		**140**	**33.3**		**94**	**24.7**		**63**	**9.9**		**22**	**8.1**		**16**	**0.7**		**1**	**2.3**		**4**	**0.5**		**0.8**	**0**		**0**	**4.06**	**7**
6, tree No. 23–85–5, Valencia strain:																																			
Orchard grade—																																			
1912	98	0	205	0	4	1	2	4	7	4	13	13	17	8	42	18	6	40	37	3	72	4	0	7	12	6	21	1	4	2	0	0	0	1.33	....
1913	127	8	442	50	3	206	45	7	149	17	1	49	13	0	34	1	6	3	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1914	90	3	229	17	10	56	20	3	54	29	14	71	19	14	43	2	10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.00	....
1915	138	1	398	3	12	15	14	4	50	31	3	98	70	0	191	15	2	36	3	4	7	0	8	1	0	0	0	0	0	0	0	0	0	4.67	....
Average	113.4		319	18.0		70	20.5		65	20.7		58	30.1		78	9.4		21	10.2		20	1.1		2	3.1		5	0.3		0.5	0		0	2.92	....
Standard grade—																																			
1912	26	14	64	2	4	9	3	4	10	2	11	7	3	15	9	7	1	15	5	6	10	0	0	2	5	4	0	0	0	0	0	0	0	2.00	....
1913	23	8	108	18	14	93	3	15	13	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1914	38	13	100	8	4	27	9	6	26	6	10	17	6	12	15	5	9	11	1	9	3	0	0	0	0	11	1	0	0	0	0	0	0	2.67	....
1915	92	15	306	25	10	108	37	10	121	17	0	48	9	9	24	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.67	....
Average	45.5		145	14.0		59	13.5		43	6.8		19	5.1		12	3.7		8	1.7		3	0		0	0.8		1	0		0	0		0	3.75	....
Cull fruits—																																			
1912	15	14	34																															.33	....
1913	5	8	70																															3.33	....
1914	2	12	12																															3.67	....
1915	3	12	22																															3.00	....
Average	7.0		35																															2.58	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Total.		Sizes. 288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.		Average number of seeds per fruit.	Number of variable fruits.
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
6, tree No. 23-85-5, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	140 12	303	2 8	10	5 8	17	7 8	20	21 7	51	25 7	55	42 9	82	4 0	7	14 11	25	1 4	2	0 0	0	1.22	29
1913	156 8	620	69 1	299	49 6	162	17 12	51	13 0	34	1 6	3	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	3.56	5
1914	131 12	341	25 14	83	29 9	80	36 8	88	26 10	58	8 3	16	1 9	3	0 0	0	0 11	1	0 0	0	0 0	0	2.78	78
1915	234 12	726	30 6	123	51 14	171	48 3	146	79 9	215	17 4	41	3 4	7	0 8	1	0 0	0	0 0	0	0 0	0	4.78	73
Average	**165.9**	**498**	**32.0**	**129**	**34.1**	**108**	**27.5**	**76**	**35.2**	**90**	**13.1**	**29**	**12.0**	**23**	**1.1**	**2**	**3.8**	**6**	**0.3**	**0.5**	**0**	**0**	3.09	46
7, tree No. 23-76-24, Valencia strain:																								
Orchard grade—																								
1912	120 12	274	3 8	13	8 4	26	7 4	20	25 6	62	29 6	64	33 0	65	6 14	12	6 7	11	0 11	1	0 0	0	.33	....
1913	128 4	420	46 14	181	43 2	137	17 2	49	17 10	45	3 0	7	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	.67	....
1914	105 0	287	26 8	87	33 10	93	30 6	75	12 0	27	2 8	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.67	....
1915	161 13	417	19 5	34	23 9	75	32 6	93	69 1	177	11 3	25	6 5	13	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
Average	129.0	350	24.0	79	27.1	83	21.8	59	31.0	78	11.5	25	10.0	20	1.7	3	1.6	3	0.2	0.3	0	0	1.50	....
Standard grade—																								
1912	22 0	54	3 2	12	0 10	2	2 9	7	5 12	14	2 5	5	4 10	9	0 9	1	2 7	4	0 0	0	0 0	0	.33	....
1913	29 10	126	25 4	112	1 7	5	2 9	8	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1914	17 12	54	5 6	21	4 10	14	3 4	9	4 0	9	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1915	57 3	179	7 12	33	19 11	66	17 2	49	10 5	26	2 5	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
Average	31.6	103	10.4	45	6.6	22	6.4	18	5.1	13	1.3	4	1.2	2	0.1	0.3	0.6	1	0	0	0	0	3.43	....
Cull fruits—																								
1912	7 5	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	6 10	81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1914	2 1	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1915	5 4	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
Average	5.3	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.34	....

Total crop—																														
1912	150	1	349	6	10	25	8	14	28	9	13	27	31	2	76	31	11	69	37	10	74	7	7	13	8	14	15	0	11	1	0	0	0	.78	12
1913	164	8	627	72	2	293	44	9	142	19	11	57	18	0	46	3	0	7	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	2.56	16
1914	124	13	352	31	14	108	38	4	107	33	10	84	16	0	36	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.56	46
1915	224	4	630	27	1	67	43	4	141	49	8	142	79	6	203	13	8	30	6	5	13	0	0	0	0	0	0	0	0	0	0	0	0	3.78	30
Average	**165.9**		**490**	**34.4**		**123**	**33.7**		**105**	**28.1**		**78**	**36.1**		**90**	**12.8**		**28**	**11.1**		**22**	**1.9**		**3**	**2.2**		**4**	**0.2**		**0.3**	**0**		**0**	**2.42**	**26**
8, tree No. 23-90-8, Valencia strain:																																			
Orchard grade—																																			
1912	112	14	235	0	4	1	2	15	9	2	12	8	17	6	43	22	15	51	36	8	73	6	11	12	14	12	25	8	11	13	0	0	0	0	....
1913	100	12	342	34	1	148	28	2	92	15	9	45	17	3	45	3	12	9	1	7	3	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1914	128	10	358	38	8	126	41	3	116	31	11	79	12	10	28	4	10	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1915	156	13	426	4	1	14	15	11	50	32	10	96	76	13	203	19	12	46	6	12	15	1	2	2	0	0	0	0	0	0	0	0	0	3.67	....
Average	124.8		340	19.2		72	22.0		67	20.7		57	31.0		80	12.8		29	11.2		23	2.0		4	3.7		6	2.2		3	0		0	2.50	....
Standard grade—																																			
1912	62	14	130	1	2	4	2	1	6	4	2	11	11	5	27	11	6	24	18	4	35	1	11	3	12	15	20	0	0	0	0	0	0	1.00	....
1913	23	3	102	17	5	83	3	13	13	1	6	4	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1914	17	12	60	9	8	37	3	14	12	2	2	6	1	12	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
1915	26	13	81	1	12	7	10	8	34	9	11	28	3	2	8	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
Average	32.7		93	7.4		33	5.1		16	4.3		12	4.2		10	3.5		7	4.6		9	0.4		0.8	3.2		5	0		0	0		0	4.25	....
Cull fruits—																																			
1912	10	12	24																															.33	....
1913	7	7	86																															6 33	....
1914	1	5	7																															2.33	....
1915	1	12	7																															5.33	....
Average	5.3		31																															3.58	....
Total crop—																																			
1912	186	8	389	1	6	5	5	0	15	6	14	19	28	11	70	34	5	75	54	12	108	8	6	15	27	11	45	8	11	13	0	0	0	.44	0
1913	130	12	530	51	6	231	31	15	105	16	15	49	17	14	47	3	12	9	1	7	3	0	0	0	0	0	0	0	0	0	0	0	0	4.55	0
1914	147	11	425	48	0	163	45	1	128	33	13	85	14	6	32	5	2	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	3
1915	185	6	514	5	13	21	26	3	84	42	5	124	79	15	211	21	8	50	6	12	15	1	2	2	0	0	0	0	0	0	0	0	0	4.78	8
Average	**162.6**		**465**	**26.6**		**105**	**27.0**		**83**	**25.0**		**70**	**34.7**		**90**	**16.2**		**36**	**15.7**		**32**	**2.4**		**4**	**6.9**		**11**	**2.2**		**3**	**0**		**0**	**3.44**	**3**
9, tree No. 23-86-10, Valencia strain:																																			
Orchard grade—																																			
1912	100	4	199	0	10	2	1	5	4	4	0	11	11	13	28	11	14	26	38	12	75	6	5	11	22	5	37	3	4	5	0	0	0	1.33	....
1913	119	10	402	38	11	162	41	15	134	18	2	52	19	8	51	0	7	1	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1914	135	11	393	58	4	191	45	2	124	25	7	63	5	5	12	1	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1915	162	10	475	9	14	38	21	8	74	44	11	137	71	3	191	12	8	29	2	14	6	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
Average	129.5		367	26.9		98	27.5		84	23.1		66	27.0		71	6.6		15	10.6		21	1.6		3	5.6		9	0.8		1	0		0	3.25	....

TABLE 1.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
9, tree No. 23-86-10, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	32 8	68	0 5	1	1 0	3	3 13	10	6 8	15	7 13	16	5 13	11	1 2	2	6 2	10	0 0	0	0 0	0	0.67	....
1913	25 13	114	19 4	96	3 4	11	1 1	3	0 0	0	0 0	0	1 10	3	0 0	0	0 10	1	0 0	0	0 0	0	3.33	....
1914	15 4	52	9 13	37	3 7	10	1 9	4	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	32 5	107	12 0	46	13 2	42	5 8	15	1 4	3	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	7.00	....
Average	26.5	85	10.3	45	5.2	17	3.0	8	2.1	5	1.1	4	1.9	4	0.3	0.5	1.7	3	0	0	0	0	3.58	....
Cull fruits—																								
1912	12 5	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	5 1	69	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
1914	2 0	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.67	....
1915	2 2	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.67	....
Average	5.4	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.25	....
Total crop—																								
1912	145 1	293	0 15	3	2 5	7	7 13	21	18 5	43	19 11	42	44 9	86	7 7	13	28 7	47	3 4	5	0 0	0	1.22	0
1913	150 8	585	57 15	258	45 3	145	19 3	55	19 8	51	0 7	1	2 9	5	0 0	0	0 10	1	0 0	0	0 0	0	3.67	0
1914	152 15	457	68 1	228	48 9	134	27 0	67	5 12	13	1 9	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.11	6
1915	197 1	592	21 14	84	34 10	116	50 3	152	72 7	194	12 15	30	2 14	6	0 0	0	0 0	0	0 0	0	0 0	0	6.78	1
Average	**161.4**	**482**	**37.2**	**143**	**32.7**	**101**	**26.0**	**74**	**29.0**	**75**	**8.7**	**19**	**12.5**	**24**	**1.9**	**3**	**7.3**	**12**	**0.8**	**1**	**0**	**0**	**3.69**	**2**
10, tree No. 23-86-5, Valencia strain:																								
Orchard grade—																								
1912	100 2	280	10 15	43	20 15	67	17 11	50	28 1	72	12 5	28	6 3	13	1 0	2	1 12	3	1 4	2	0 0	0	1.33	....
1913	136 1	469	63 6	258	43 1	134	13 8	38	10 15	28	3 11	8	1 8	3	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1914	88 1	240	30 0	95	27 8	74	19 14	48	7 10	17	2 0	4	1 1	2	0 0	0	0 0	0	0 0	0	0 0	0	5.33	....
1915	147 9	408	3 1	12	11 9	39	36 6	110	73 0	194	17 2	40	5 6	11	1 1	2	0 0	0	0 0	0	0 0	0	7.33	....
Average	118.0	349	26.8	102	25.8	79	21.9	62	29.9	78	8.8	20	3.5	7	0.5	1	0.4	1	0.3	0.5	0	0	4.44	....

Standard grade—																																
1912	58	11	149	6	9	24	9	7	28	12	2	34	13	1	32	6	6	14	6	7	12	0	8	1	4	3	4	0	0	0	0	0	1.00	....
1913	25	10	115	20	3	98	3	5	11	1	10	5	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1914	23	0	67	8	4	29	7	13	22	3	10	9	1	12	4	1	0	2	0	9	1	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	36	7	115	9	6	39	11	2	34	8	10	24	5	8	14	1	6	3	0	7	1	0	0	0	0	0	0	0	0	0	0	0	6.67	....
Average	35.9		112	11.1		48	7.9		24	6.5		18	5.1		13	2.3		5	1.9		4	0.1		0.3	1.0		1	0		0		0	3.75	....
Cull fruits—																																
1912	16	12	49																													.33	....
1913	6	3	68																													3.67	....
1914	1	8	8																													3.33	....
1915	2	10	9																													7.33	....
Average	6.8		34																													3.67	....
Total crop—																																
1912	175	9	478	17	8	67	30	6	95	29	13	84	41	2	104	18	11	42	12	10	25	1	8	3	5	15	7	1	4	2	0	0	.89	49
1913	167	14	652	83	9	356	46	6	145	15	2	43	10	15	28	4	3	9	1	8	3	0	0	0	0	0	0	0	0	0	0	0	3.22	9
1914	112	9	315	38	4	124	35	5	96	23	8	57	9	6	21	3	0	6	1	10	3	0	0	0	0	0	0	0	0	0	0	0	4.56	20
1915	186	10	532	12	7	51	22	11	73	45	0	134	78	8	208	18	8	43	5	13	12	1	1	2	0	0	0	0	0	0	0	0	7.11	34
Average	160.7		494	37.9		150	33.7		102	28.4		80	35.0		90	11.1		25	5.4		11	0.6		1	1.5		2	0.3		0.5	0		0	3.95	28
11, tree No. 23-86-2, Valencia strain:																																
Orchard grade—																																
1912	90	13	198	0	4	1	5	12	18	3	14	11	18	2	44	22	9	49	24	12	49	5	9	10	5	4	9	4	11	7	0	0	0	....
1913	123	10	461	74	2	310	32	2	104	10	15	31	5	15	15	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1914	121	10	315	24	8	79	35	15	97	32	6	79	20	4	44	6	12	13	0	9	1	1	4	2	0	0	0	0	0	0	0	0	2.00	....
1915	125	8	352	3	13	15	14	3	49	35	9	109	50	12	132	16	12	38	3	5	7	1	2	2	0	0	0	0	0	0	0	0	5.33	....
Average	115.4		332	25.7		101	22.0		67	20.7		58	23.8		59	11.6		25	7.2		14	2.0		4	1.3		2	1.2		2	0		0	2.50	....
Standard grade—																																
1912	53	1	112	1	12	6	1	4	4	4	9	12	8	11	20	11	11	25	15	9	29	1	2	2	8	7	14	0	0	0	0	0	1.33	....
1913	20	15	93	18	8	85	1	15	7	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1914	16	5	47	3	4	13	5	5	16	1	8	4	3	4	8	1	14	4	0	0	0	0	0	0	1	2	2	0	0	0	0	0	3.67	....
1915	66	0	205	14	14	58	22	9	72	16	11	46	7	1	18	4	5	10	0	8	1	0	0	0	0	0	0	0	0	0	0	0	4.33	....
Average	39.1		114	9.6		41	7.8		25	5.7		16	4.9		12	4.5		10	4.0		8	0.3		0.5	2.4		4	0		0	0		0	3.42	....
Cull fruits—																																
1912	8	7	18																													0	....
1913	10	8	103																													4.67	....
1914	2	3	12																													3.00	....
1915	3	1	15																													5.67	....
Average	6.0		37																													3.33	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
11, tree No. 23-86-2, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	152 5	328	2 0	7	7 0	22	8 7	23	26 13	64	34 4	74	40 5	78	6 11	12	13 11	23	4 11	7	0 0	0	0.44	9
1913	155 1	657	92 10	395	34 1	111	10 15	31	6 7	16	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.89	14
1914	140 2	374	27 12	92	41 4	113	33 14	83	23 8	52	8 10	17	0 9	1	1 4	2	1 2	2	0 0	0	0 0	0	2.89	32
1915	194 9	572	18 11	73	36 12	121	52 4	155	57 13	150	21 1	48	3 13	8	1 2	2	0 0	0	0 0	0	0 0	0	5.11	37
Average	160.5	483	35.3	142	29.8	92	26.4	73	28.6	71	16.1	35	11.2	22	2.3	4	3.7	6	1.2	2	0	0	3.08	23
12, tree No. 23-90-2, Valencia strain:																								
Orchard grade—																								
1912	98 8	234	3 0	11	8 11	27	9 13	27	26 6	65	18 5	41	26 1	52	2 11	5	2 4	4	1 5	2	0 0	0	0	....
1913	101 14	357	47 9	195	32 14	105	8 15	26	9 13	25	2 3	5	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1914	111 14	359	71 13	252	24 14	71	10 1	25	2 10	6	1 15	4	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1915	97 14	289	9 7	36	17 14	59	28 9	85	35 1	93	5 11	13	1 4	3	0 0	0	0 0	0	0 0	0	0 0	0	6.33	....
Average	102.5	310	33.0	124	21.1	66	14.3	41	18.5	47	7.0	16	7.1	14	0.7	1	0.6	1	0.3	0.5	0	0	3.67	....
Standard grade—																								
1912	60 12	148	7 9	27	5 4	16	9 13	27	9 6	22	9 9	20	14 10	28	2 4	4	2 5	4	0 0	0	0 0	0	2.00	....
1913	31 8	142	27 3	129	2 3	7	1 4	4	0 6	1	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1914	31 0	119	21 12	91	7 1	22	1 0	3	1 3	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1915	56 7	190	11 14	50	23 12	82	11 6	34	6 13	18	2 2	5	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
Average	44.9	150	17.1	74	9.6	32	5.9	17	4.4	11	3.0	7	3.8	7	0.6	1	0.6	1	0	0	0	0	3.42	....
Cull fruits—																								
1912	38 0	101																					.67	....
1913	6 0	66																					4.00	....
1914	2 8	15																					3.67	....
1915	1 14	10																					4.67	....
Average	12.1	48																					3.25	....

Total crop—																														
1912	197	4	483	10	9	38	13	15	43	19	10	54	35	12	87	27	14	61	40	11	80	4	15	9	1	9	8	1	5	2	0	0	0	.89	23
1913	139	6	565	74	12	324	35	1	112	10	3	30	10	3	26	2	11	6	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.89	4
1914	145	6	493	93	9	343	31	15	93	11	1	28	3	13	9	1	15	4	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	3.89	61
1915	156	3	489	21	5	86	41	10	141	39	15	119	41	14	111	7	13	18	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	5.11	38
Average	**159.5**		**508**	**50.0**		**198**	**30.6**		**97**	**20.4**		**58**	**22.9**		**58**	**10.1**		**22**	**10.9**		**22**	**1.2**		**2**	**1.1**		**2**	**0.3**		**0.5**		**0**		**0**	**3.45**	**32**
13, tree No. 23-85-2, Valencia strain:																																			
Orchard grade—																																			
1912	141	5	363	6	3	23	21	4	66	21	6	60	52	6	130	20	4	45	17	1	34	1	1	2	1	12	3	0	0	0	0	0	0	1.00	....
1913	119	13	414	48	3	195	44	2	145	13	2	38	11	4	29	1	10	4	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	1.67	....
1914	102	2	298	51	9	167	32	6	88	14	15	36	3	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.00	....
1915	121	13	356	2	13	11	18	7	64	42	1	128	49	12	133	7	4	17	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	6.33	....
Average	121.3		358	27.2		99	29.0		91	22.9		66	29.2		75	7.3		17	5.0		10	0.3		0.5	0.4		1	0		0		0		0	3.75	....
Standard grade—																																			
1912	30	10	77	3	4	12	2	6	7	5	10	15	8	3	20	5	15	13	4	1	8	0	0	0	1	3	2	0	0	0	0	0	0	2.33	....
1913	15	4	80	13	15	75	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.50	....
1914	32	12	115	24	4	91	5	12	17	1	1	3	1	11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1915	46	15	157	16	4	62	21	9	70	7	8	21	0	12	2	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.67	....
Average	31.4		107	14.4		60	7.8		25	3.4		10	2.7		7	1.7		4	1.0		2	0		0	0.3		0.5	0		0		0		0	5.13	....
Cull fruits—																																			
1912	6	12	21	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.00	....
1913	3	11	55	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	7.00	....
1914	2	0	9	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	4.67	....
1915	2	7	11	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	7.00	....
Average	3.7		21	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	4.92	....
Total crop—																																			
1912	178	11	461	9	7	35	23	10	73	27	0	75	60	9	150	26	3	58	21	2	42	1	1	2	2	15	5	0	0	0	0	0	0	1.44	1
1913	138	12	549	62	2	270	45	7	150	13	2	38	11	4	29	1	10	4	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	4.50	2
1914	136	14	422	75	13	258	38	2	105	16	0	39	4	15	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.89	7
1915	171	3	524	19	1	73	40	0	134	49	9	149	50	8	135	8	2	19	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	6.67	7
Average	**156.4**		**489**	**41.6**		**159**	**36.8**		**116**	**26.4**		**76**	**31.8**		**82**	**9.0**		**20**	**6.3**		**12**	**0.3**		**0.5**	**0.7**		**1**	**0**		**0**	**0**		**0**	**4.38**	**4**
14, tree No. 23-87-2, Valencia strain:																																			
Orchard grade—																																			
1912	120	10	350	16	7	61	35	9	112	22	6	63	35	13	91	8	8	19	1	15	4	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1913	116	4	352	27	8	109	32	15	102	17	15	50	26	0	66	6	15	16	3	2	6	0	0	0	1	13	3	0	0	0	0	0	0	5.33	....
1914	108	15	323	54	2	181	29	13	83	15	6	38	8	10	19	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
1915	121	1	328	2	3	8	15	6	50	31	5	91	47	14	125	17	1	39	5	12	12	1	8	3	0	0	0	0	0	0	0	0	0	5.67	....
Average	116.7		338	24.6		90	28.3		87	21.8		61	29.6		75	8.4		19	2.7		6	0.4		1	0.5		1	0		0		0		0	4.92	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
14, tree No. 23-87-2, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	66 3	178	10 15	38	11 15	36	16 1	43	14 9	35	8 0	17	4 11	9	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1913	20 9	86	14 12	68	3 4	11	1 12	5	0 13	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1914	15 3	50	8 8	31	4 14	14	0 10	2	0 12	2	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1915	30 4	94	4 0	17	9 6	31	10 0	29	3 8	9	3 6	8	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
Average	33.0	102	9.5	39	7.4	23	7.1	20	4.9	12	3.0	7	1.2	2	0	0	0	0	0	0	0	0	4.4	....
Cull fruits—																								
1912	10 15	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1913	3 11	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.33	....
1914	2 2	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.67	....
1915	2 2	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.33	....
Average	4.7	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.83	....
Total crop—																								
1912	197 12	561	27 6	99	47 8	148	38 7	106	50 6	126	16 8	36	6 10	13	0 0	0	0 0	0	0 0	0	0 0	0	3.56	1
1913	140 8	466	42 4	177	36 3	113	19 11	55	26 13	68	6 15	16	3 2	6	0 0	0	1 13	3	0 0	0	0 0	0	5.33	2
1914	126 4	386	62 10	212	34 11	97	16 0	40	9 6	21	1 7	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	7
1915	153 7	430	6 3	25	24 12	81	41 5	120	51 6	134	20 7	47	5 12	12	1 8	3	0 0	0	0 0	0	0 0	0	5.00	6
Average	**154.5**	**461**	**34.6**	**128**	**35.8**	**110**	**28.9**	**80**	**34.5**	**87**	**11.3**	**26**	**3.9**	**8**	**0.4**	**1**	**0.5**	**1**	**0**	**0**	**0**	**0**	**4.56**	**4**
15, tree No. 23-90-9, Valencia strain:																								
Orchard grade—																								
1912	110 12	274	2 15	11	10 4	32	14 5	40	36 6	92	22 8	51	18 11	38	2 10	5	2 6	4	0 11	1	0 0	0	1.00	....
1913	93 14	313	37 0	146	27 8	88	15 13	45	11 5	29	2 4	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	138 7	411	62 12	209	44 3	125	24 8	61	6 7	15	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	120 1	407	36 0	140	48 9	163	19 0	58	16 8	46	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	7.00	....
Average	115.8	351	34.7	125	32.6	102	18.4	51	17.7	46	6.3	14	4.7	10	0.7	1	0.6	1	0.2	0.3	0	0	3.33	....

| | | |

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
16, tree No. 23–93–9, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	122 2	215	0 4	1	1 2	3	2 6	6	6 1	14	9 12	20	25 0	47	5 11	10	38 4	62	15 6	22	0 0	0	0.22	0
1913	124 10	453	37 11	160	29 7	95	20 10	61	20 15	53	7 9	17	2 13	6	0 9	1	0 10	1	0 0	0	0 0	0	4.00	1
1914	180 11	542	73 9	251	60 10	171	30 5	76	11 10	27	2 8	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.44	8
1915	185 5	527	7 5	30	43 8	140	50 6	144	58 2	149	17 7	39	5 12	12	1 2	2	0 0	0	0 0	0	0 0	0	4.33	7
Average	**153.2**	**434**	**29.7**	**111**	**33.7**	**102**	**25.9**	**72**	**24.2**	**61**	**9.3**	**20**	**8.4**	**16**	**1.8**	**1**	**9.7**	**16**	**3.8**	**6**	**0**	**0**	3.00	4
17, tree No. 23–88–10, Valencia strain:																								
Orchard grade—																								
1912	78 2	152	0 0	0	0 15	3	2 9	7	6 12	16	15 15	35	22 0	43	5 14	10	13 12	23	10 5	15	0 0	0	1.00	....
1913	109 10	339	22 6	91	34 4	110	22 8	64	23 12	60	3 9	8	2 9	5	0 10	1	0 0	0	0 0	0	0 0	0	4.33	....
1914	118 10	313	21 7	67	43 6	118	38 5	94	13 0	29	2 8	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	135 8	354	2 6	9	8 6	27	29 5	85	56 6	146	26 13	62	10 2	21	1 8	3	0 10	1	0 0	0	0 0	0	5.33	....
Average	110.5	290	11.5	42	21.7	65	23.2	63	25.0	63	12.2	28	8.7	17	2.0	4	3.6	6	2.6	4	0 0	0	3.25	....
Standard grade—																								
1912	49 4	103	0 4	1	2 2	6	5 10	15	8 7	20	8 9	18	13 3	24	2 4	4	8 13	15	0 0	0	0 0	0	1.33	....
1913	27 8	118	18 12	90	6 14	23	1 7	4	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.00	....
1914	25 2	73	7 6	25	8 2	24	4 15	13	3 4	8	0 15	2	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
1915	43 7	130	2 12	12	14 8	47	15 4	44	9 3	23	1 12	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	7.00	....
Average	36.3	106	7.3	32	7.9	25	6.8	19	5.3	13	2.8	6	3.4	6	0.6	1	2.2	4	0	0	0	0	4.83	....
Cull fruits—																								
1912	4 8	11																					3.33	....
1913	4 10	63																					3.67	....
1914	3 8	17																					3.67	....
1915	4 8	17																					4.67	....
Average	4.3	27																					3.84	....

Total crop—																																
1912	131	14	266	0	4	1	3	1	9	8	3	22	15	3	36	24	8	53	35	3	67	8	2	14	22	9	38	10	5	15	0	0	0	1.89	0
1913	141	12	520	41	2	181	41	2	133	23	15	68	24	3	61	3	9	8	2	9	5	0	10	1	0	0	0	0	0	0	0	0	0	4.67	0
1914	147	4	403	28	13	92	51	8	142	43	4	107	16	4	37	3	7	7	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.67	12
1915	183	7	501	5	2	21	22	14	74	44	9	129	65	9	169	28	9	66	10	2	21	1	8	3	0	10	1	0	0	0	0	0	0	5.67	15
Average	**151**	**1**	**423**	**18**	**8**	**74**	**29**	**6**	**90**	**29**	**7**	**82**	**30**	**3**	**76**	**15**	**0**	**34**	**12**	**1**	**24**	**2**	**6**	**5**	**5**	**8**	**10**	**2**	**6**	**4**	**0**	**0**	**0**	**3.98**	**7**
18, tree No. 23-85-3, Valencia strain:																																			
Orchard grade—																																			
1912	127	3	290	1	11	6	10	13	33	10	14	30	27	2	67	26	5	58	40	11	80	3	6	6	4	4	7	2	1	3	0	0	0	.33	....
1913	101	5	361	43	5	180	39	9	131	9	10	28	6	1	16	2	3	5	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1914	88	0	213	8	2	28	20	8	54	30	9	71	23	0	49	5	5	10	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	114	13	327	2	0	8	10	5	37	25	9	80	59	8	162	14	9	34	2	14	6	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
Average	107	8	298	13	8	56	20	3	64	19	2	52	28	9	74	12	1	27	11	2	22	0	8	2	1	1	2	0	5	1	0	0	0	3.00	....
Standard grade—																																			
1912	29	5	69	2	15	11	1	10	5	3	12	10	4	10	11	6	3	13	8	5	16	0	0	0	1	14	3	0	0	0	0	0	0	1.33	....
1913	21	7	100	13	11	71	7	1	27	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1914	18	15	53	4	13	19	6	2	17	2	7	6	2	12	6	1	8	3	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	67	3	225	25	1	97	24	14	81	11	10	33	4	11	12	0	7	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	6.33	....
Average	34	2	112	11	6	50	9	9	33	4	6	13	3	0	7	2	0	4	2	5	5	0	0	0	0	5	1	0	0	0	0	0	0	3.92	....
Cull fruits—																																			
1912	15	5	32	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.00	....
1913	8	3	100	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.50	....
1914	2	6	9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.33	....
1915	2	13	18	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5.33	....
Average	7	2	40	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.29	....
Total crop—																																			
1912	171	13	391	4	10	17	12	7	38	14	10	40	31	12	78	32	8	71	49	0	96	3	6	6	6	2	10	2	1	3	0	0	0	.89	4
1913	130	15	561	57	0	251	46	10	158	10	5	30	6	1	16	2	3	5	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	3.13	4
1914	109	5	275	12	15	47	26	10	71	33	0	77	25	12	55	6	13	13	1	13	3	0	0	0	0	0	0	0	0	0	0	0	0	3.89	12
1915	184	13	570	27	1	105	35	3	118	37	3	113	64	3	174	15	0	35	3	6	7	0	0	0	0	0	0	0	0	0	0	0	0	5.78	6
Average	**149**	**2**	**449**	**25**	**3**	**105**	**30**	**2**	**96**	**23**	**8**	**66**	**31**	**9**	**81**	**14**	**1**	**31**	**13**	**7**	**27**	**0**	**8**	**2**	**1**	**5**	**3**	**0**	**5**	**1**	**0**	**0**	**0**	**3.42**	**7**
19, tree No. 23-87-8, Valencia strain:																																			
Orchard grade—																																			
1912	77	0	200	1	12	6	4	2	13	9	0	26	20	10	52	18	12	42	9	10	39	5	10	10	4	11	8	2	13	4	0	0	0	1.00	....
1913	92	0	313	29	6	126	30	15	100	17	11	51	11	14	31	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1914	129	6	405	80	10	273	33	10	95	13	6	33	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1915	157	10	496	28	10	107	48	14	162	38	8	115	38	4	104	3	6	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
Average	114	0	354	35	1	128	29	4	93	19	6	56	18	1	48	6	1	14	2	4	10	1	4	3	1	2	2	0	7	1	0	0	0	2.67	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
19, tree No. 23-87-8, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	54 2	114	1 14	7	1 11	5	3 0	8	5 14	14	10 9	23	18 15	36	2 14	5	9 5	16	0 0	0	0 0	0	2.33	....
1913	27 2	127	21 14	109	4 4	15	1 0	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1914	13 15	50	9 8	38	2 11	8	0 12	2	0 0	0	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	31 10	112	12 3	50	13 2	45	4 6	12	1 8	4	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	8.00	....
Average	31.7	101	11.4	51	5.4	18	2.3	6	1.8	5	3.0	7	4.7	9	0.7	1	2.3	4	0	0	0	0	4.50	....
Cull fruits—																								
1912	1 8	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	4 14	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.00	....
1914	4 8	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.67	....
1915	2 13	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
Average	3.4	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.84	....
Total crop—																								
1912	132 10	318	3 10	13	5 13	18	12 0	34	26 8	66	29 5	65	28 9	75	8 8	15	14 0	24	2 13	4	0 0	0	1.67	1
1913	124 0	499	51 4	235	35 3	115	18 11	54	11 14	31	2 2	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.89	3
1914	147 13	478	90 2	311	36 5	103	14 2	35	1 12	4	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.22	8
1915	192 1	620	40 13	157	62 0	207	42 14	127	39 12	108	3 13	9	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.89	17
Average	**149.1**	**479**	**46.5**	**179**	**34.8**	**111**	**21.9**	**63**	**20.0**	**52**	**9.1**	**20**	**7.1**	**19**	**2.1**	**4**	**3.5**	**6**	**0.7**	**1**	**0**	**0**	**3.67**	**7**
20, tree No. 23-87-5, Valencia strain:																								
Orchard grade—																								
1912	108 12	257	2 3	8	9 4	28	9 2	25	36 14	90	25 11	57	19 1	38	2 5	4	4 4	7	0 0	0	0 0	0	1.67	....
1913	88 3	252	17 13	70	19 14	63	12 4	33	21 7	52	10 0	22	5 7	10	0 0	0	1 6	2	0 0	0	0 0	0	1.00	....
1914	133 3	381	49 4	161	48 1	134	22 4	56	12 11	28	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1915	105 12	284	2 11	9	5 2	16	14 14	42	50 2	125	20 6	45	11 6	23	2 3	4	0 0	0	0 0	0	0 0	0	3.67	....
Average	109.2	289	18.0	62	20.6	60	14.6	39	30.3	74	14.3	32	9.0	18	1.1	2	1.5	2	0	0	0	0	2.67	....

Standard grade—																																
1912	42	14	91	2	0	7	0	15	3	4	8	12	10	4	24	10	12	22	9	8	18	0	9	1	4	6	4	0	0	0	0	0	1.00	....
1913	22	6	87	14	14	68	3	2	10	1	12	5	0	0	0	0	0	0	0	0	0	0	10	1	1	4	2	0	0	0	0	12	4.00	....
1914	43	3	147	23	15	92	12	10	38	4	7	12	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	31	3	91	4	4	17	9	10	30	8	8	23	7	1	17	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.00	....
Average	34.9		104	11.3		46	6.6		20	4.8		13	4.9		12	3.1		7	2.4		5	0.3		0.5	1.4		2	0		0	0.2		0.3	3.67	....
Cull fruits—																																
1912	9	11	25																													1.00	....
1913	3	1	33																													3.33	....
1914	2	11	16																													4.00	....
1915	2	6	8																													4.67	....
Average	4.5		21																													3.25	....
Total crop—																																
1912	161	5	373	4	3	15	10	3	31	13	10	37	47	2	114	36	7	79	28	9	56	2	14	5	8	10	11	0	0	0	0	0	1.22	3
1913	113	10	372	32	11	138	23	0	73	14	0	38	21	7	52	10	0	22	5	7	10	0	10	1	2	10	4	0	0	0	0	12	2.78	1
1914	179	1	544	73	3	253	60	11	172	26	11	68	14	14	33	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	13
1915	140	5	363	6	15	26	14	12	46	23	6	65	57	3	142	22	2	49	11	6	23	2	3	4	0	0	0	0	0	0	0	0	4.78	10
Average	148.6		413	29.3		108	27.2		81	19.4		52	35.2		85	17.4		38	11.3		22	1.4		3	2.8		4	0		0	0.2		0.3	3.20	7
21, tree No. 23-85-4, Valencia strain:																																
Orchard grade—																																
1912	65	6	133	0	4	1	2	1	6	1	14	5	10	2	24	15	1	32	20	6	39	6	7	11	7	12	13	1	7	2	0	0	0	....
1913	99	15	351	4	7	170	33	0	108	13	12	40	11	14	31	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....
1914	119	15	315	36	0	113	30	5	80	32	13	78	15	13	34	4	7	9	0	0	0	0	9	1	0	0	0	0	0	0	0	0	2.00	....
1915	119	6	345	5	4	21	11	13	41	33	4	103	52	15	142	13	6	32	2	12	6	0	0	0	0	0	0	0	0	0	0	0	3.33	....
Average	101.2		286	20.5		76	19.3		59	20.4		57	22.7		58	8.5		19	5.8		11	1.8		3	1.9		3	0.4		0.5	0		0	1.58	....
Standard grade—																																
1912	23	5	47	0	10	2	0	0	0	0	12	2	6	4	14	4	6	9	7	0	13	0	9	1	3	12	6	0	0	0	0	0	.67	....
1913	10	15	97	17	1	84	3	1	11	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1914	33	13	101	15	15	56	5	13	17	6	6	16	2	10	6	2	0	4	1	1	2	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	79	13	259	23	1	90	32	5	103	16	5	46	5	15	15	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
Average	39.5		126	14.2		58	10.3		33	6.0		18	3.7		9	2.1		5	2.0		4	0.1		0.3	0.9		2	0		0	0		0	2.67	....
Cull fruits—																																
1912	20	5	41																													1.00	....
1913	6	4	78																													5.50	....
1914	0	15	4																													3.33	....
1915	2	10	11																													5.00	....
Average	7.5		34																													3.71	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
21, tree No. 23-85-4, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	109 0	221	0 14	3	2 1	6	2 10	7	16 6	38	19 7	41	27 6	52	7 0	12	11 8	19	1 7	2	0 0	0	0.56	14
1913	126 15	526	57 8	254	36 1	119	14 6	42	11 14	31	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.13	14
1914	154 11	420	51 15	169	36 2	97	39 3	94	18 7	40	6 7	13	1 1	2	0 9	1	0 0	0	0 0	0	0 0	0	3.00	29
1915	201 13	615	28 5	111	44 2	144	49 9	149	58 14	157	15 9	37	2 12	6	0 0	0	0 0	0	0 0	0	0 0	0	3.67	45
Average	**148.1**	**446**	**34.7**	**134**	**29.6**	**92**	**26.4**	**73**	**26.4**	**67**	**10.6**	**23**	**7.8**	**16**	**1.9**	**3**	**2.9**	**5**	**0.4**	**0.5**	**0**	**0**	**2.59**	**26**
22, tree No. 23-92-1, Valencia strain:																								
Orchard grade—																								
1912	74 5	167	0 13	3	2 6	8	5 5	15	13 10	34	16 2	36	25 7	51	2 10	6	6 2	11	1 14	3	0 0	0	.33	....
1913	78 3	255	22 10	90	25 11	86	11 8	33	10 15	29	6 0	14	1 7	3	0 0	0	0 0	0	0 0	0	0 0	0	1.00	....
1914	130 5	370	65 1	193	37 8	108	17 13	46	8 15	21	0 0	0	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	68 4	177	0 10	3	4 5	13	15 0	44	25 10	67	11 5	27	9 8	20	1 14	3	0 0	0	0 0	0	0 0	0	3.33	....
Average	87.8	242	22.1	72	17.5	54	12.4	35	14.8	38	8.4	19	9.3	19	1.1	2	1.5	3	0.5	1	0	0	1.75	....
Standard grade—																								
1912	77 13	173	1 6	5	3 7	11	4 1	11	21 7	52	16 4	35	20 7	40	2 3	4	8 10	15	0 0	0	0 0	0	1.00	....
1913	46 15	194	32 6	150	7 6	24	4 0	12	3 3	8	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1914	30 9	106	16 10	67	5 11	18	4 0	11	2 0	5	1 11	4	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	37 13	108	2 2	9	8 6	28	10 13	32	8 0	21	4 13	11	3 11	7	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
Average	48.3	145	13.1	58	6.2	20	5.7	17	8.7	22	5.7	13	6.2	12	0.5	1	2.2	4	0	0	0	0	2.58	....
Cull fruits—																								
1912	28 4	59																					0	....
1913	2 11	33																					.33	....
1914	2 5	11																					2.67	....
1915	14 6	8																					1.67	....
Average	11.9	28																					1.17	....

Total crop—																														
1912	180	6	399	2	3	8	5	13	19	9	6	26	35	1	86	32	6	71	45	14	91	4	13	10	14	12	26	1	14	3	0	0	0	.44	20
1913	127	13	482	55	0	240	33	1	110	15	8	45	14	2	37	6	0	14	1	7	3	0	0	0	0	0	0	0	0	0	0	0	0	1.22	16
1914	163	3	487	81	11	260	43	3	126	21	13	57	10	15	26	1	11	4	1	9	3	0	0	0	0	0	0	0	0	0	0	0	0	2.89	52
1915	120	7	293	2	12	12	12	11	41	25	13	76	33	10	88	16	2	38	13	3	27	1	14	3	0	0	0	0	0	0	0	0	0	2.78	21
Average	**148.0**		**415**	**35**	**4**	**130**	**23.7**		**74**	**18.1**		**51**	**23.4**		**59**	**14.0**		**32**	**15.5**		**31**	**1.7**		**3**	**3.7**		**7**	**0.5**		**1**	**0**		**0**	**1.83**	**27**
23, tree No. 23–75–19, Valencia strain:																																			
Orchard grade—																																			
1912	87	2	182	0	4	1	2	15	9	2	15	8	13	4	32	15	11	34	32	7	64	6	12	12	11	10	20	1	4	2	0	0	0	.33	....
1913	107	10	340	27	5	103	40	8	129	22	10	65	14	15	38	2	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1914	106	0	288	20	12	67	37	4	103	35	6	90	10	11	24	1	7	3	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	125	1	317	2	0	7	6	8	20	19	8	56	56	8	144	25	5	58	11	10	25	3	10	7	0	0	0	0	0	0	0	0	0	7.67	....
Average	106.5		282	12.6		45	21.8		65	19.6		55	23.3		60	11.2		25	11.1		23	2.6		5	2.9		5	0.1		0.5	0		0	3.83	....
Standard grade—																																			
1912	49	4	103	0	12	3	1	10	5	2	15	8	6	14	16	9	5	20	17	5	33	1	10	3	8	13	15	0	0	0	0	0	0	.67	....
1913	37	8	157	27	0	122	8	4	28	1	9	5	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
1914	9	11	29	1	14	8	3	1	9	2	8	7	1	11	4	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1915	27	5	79	1	4	7	6	0	19	8	12	25	6	9	17	4	4	10	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	7.33	....
Average	30.9		92	7.7		35	4.7		15	3.9		11	4.0		10	3.5		8	4.5		9	0.2		1	2.2		4	0		0	0		0	4.75	....
Cull fruits—																																			
1912	23	8	49																															1.33	....
1913	4	10	55																															4.33	....
1914	4	10	21																															2.00	....
1915	1	7	6																															7.33	....
Average	8.5		33																															3.75	....
Total crop—																																			
1912	159	14	334	1	0	4	4	9	14	5	14	16	20	2	48	25	0	54	49	12	97	8	6	15	20	7	35	1	4	2	0	0	0	.78	0
1913	149	12	552	54	5	225	48	12	157	24	3	70	15	10	40	2	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.11	3
1914	120	15	338	22	10	75	40	5	112	37	14	97	12	6	28	2	0	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	4.11	3
1915	153	13	402	3	4	14	12	8	39	28	4	81	63	1	161	29	9	68	12	2	26	3	10	7	0	0	0	0	0	0	0	0	0	8.11	7
Average	**146.3**		**407**	**20.3**		**80**	**26.5**		**81**	**24.0**		**66**	**27.8**		**69**	**14.7**		**33**	**15.8**		**31**	**3.0**		**6**	**5.1**		**9**	**0.3**		**0.5**	**0**		**0**	**4.28**	**3**
24, tree No. 23–86–6, Valencia strain:																																			
Orchard grade—																																			
1912	56	13	112	0	4	1	0	5	1	0	12	2	10	14	26	13	14	29	13	12	26	5	6	9	8	2	13	3	8	5	0	0	0	.33	....
1913	106	1	367	46	3	186	37	2	120	12	0	34	9	7	24	1	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1914	97	7	237	10	12	33	25	10	68	34	8	82	17	8	37	8	9	16	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	151	6	431	4	8	18	18	0	63	44	0	133	62	8	166	18	8	43	3	5	7	0	9	1	0	0	0	0	0	0	0	0	0	4.33	....
Average	102.9		287	15.4		60	20.3		63	22.8		63	25.1		63	10.6		23	4.4		9	1.5		3	2.0		3	0.9		1	0		0	3.00	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
24, tree No. 23-86-6, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	51 15	104	0 9	2	0 11	2	4 10	12	11 7	26	8 12	18	14 8	26	2 6	4	9 0	14	0 0	0	0 0	0	0.33	....
1913	35 7	160	28 0	137	4 12	16	1 12	5	0 6	1	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1914	18 3	52	5 3	19	4 14	14	2 12	7	3 7	8	1 7	3	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	44 4	139	15 2	57	10 8	33	10 1	28	5 11	14	2 6	6	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
Average	37.5	114	12.2	54	5.2	16	4.8	13	5.2	12	3.3	7	3.9	7	0.6	1	2.3	4	0	0	0	0	2.25	....
Cull fruits—																								
1912	9 7	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	....
1913	5 5	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.33	....
1914	1 14	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.33	....
1915	3 6	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
Average	5.0	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.50	....
Total crop—																								
1912	118 3	233	0 13	3	1 0	3	5 6	14	22 5	52	22 10	47	28 4	52	7 12	13	17 2	27	3 8	5	0 0	0	.56	9
1913	146 13	581	74 3	323	41 14	136	13 12	39	9 13	25	1 14	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	9
1914	117 8	301	15 15	52	30 8	82	37 4	89	20 15	45	10 0	19	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	4.22	17
1915	199 0	583	19 10	75	28 8	96	54 1	161	68 3	180	20 14	49	3 13	8	0 9	1	0 0	0	0 0	0	0 0	0	3.22	31
Average	**145.4**	**425**	**27.6**	**113**	**25.5**	**79**	**27.6**	**76**	**30.3**	**76**	**13.8**	**30**	**8.3**	**16**	**2.1**	**4**	**4.3**	**7**	**0.9**	**1**	**0**	**0**	**2.92**	**17**
25, tree No. 23-87-9, Valencia strain:																								
Orchard grade—																								
1912	77 14	173	1 0	4	4 3	13	5 8	15	16 14	42	17 6	38	21 3	42	4 11	8	3 10	6	3 7	5	0 0	0	0	....
1913	99 9	348	41 12	177	28 4	93	12 8	36	12 5	32	3 10	8	0 8	1	0 0	0	0 10	1	0 0	0	0 0	0	2.00	....
1914	93 3	242	21 0	66	28 1	75	28 12	69	11 10	25	3 12	7	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	140 4	406	12 4	46	27 7	90	33 4	97	52 11	140	10 5	24	4 5	9	0 0	0	0 0	0	0 0	0	0 0	0	5.33	....
Average	102.7	292	19.0	73	22.0	68	20.0	54	23.4	60	8.8	19	6.5	13	1.2	2	1.1	2	0.9	1	0	0	2.75	....

| | | |

TABLE 1.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
26, tree No. 23–88–2, Valencia strain—Continued.																								
Total crop—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	157 6	405	10 1	40	19 8	59	27 11	75	43 9	105	23 12	51	19 5	38	0 9	1	2 6	4	0 0	0	0 0	0	0.89	3
1913	109 6	438	58 10	253	29 1	93	9 3	26	6 13	17	0 14	2	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.78	3
1914	148 7	486	88 6	314	42 4	121	12 9	32	2 10	6	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.56	31
1915	164 11	480	9 5	37	41 6	135	42 8	122	51 1	133	13 14	32	2 11	6	0 0	0	0 0	0	0 0	0	0 0	0	3.56	39
Average	**145.0**	**452**	**41.6**	**161**	**33.1**	**102**	**23.0**	**64**	**26.0**	**65**	**10.0**	**22**	**5.6**	**11**	**0.1**	**0.3**	**0.6**	**1**	**0**	**0**	**0**	**0**	**2.70**	**19**
27, tree No. 23–85–6, Valencia strain:																								
Orchard grade—																								
1912	68 3	145	0 3	1	3 3	10	3 9	10	14 12	36	12 8	27	16 13	33	3 14	7	9 2	15	4 3	6	0 0	0	2.00	....
1913	94 2	321	35 6	146	31 9	103	13 7	38	12 6	31	1 6	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1914	94 8	229	10 10	33	24 6	65	22 6	54	24 5	52	12 5	24	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
1915	101 3	293	1 11	7	5 9	20	25 11	81	52 0	141	13 9	32	4 11	10	1 0	2	0 0	0	0 0	0	0 0	0	5.00	....
Average	90.3	247	12.0	47	16.2	50	16.3	46	25.9	65	9.9	22	5.5	11	1.2	2	2.3	4	1.1	2	0	0	3.75	....
Standard grade—																								
1912	31 13	74	1 13	6	1 6	4	4 9	12	9 9	23	6 1	13	6 9	13	0 0	0	1 14	3	0 0	0	0 0	0	1.00	....
1913	22 7	99	16 10	82	2 9	9	1 13	5	0 15	2	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.33	....
1914	36 1	94	7 1	25	10 2	28	5 0	13	5 5	12	3 9	7	4 6	8	0 0	0	0 10	1	0 0	0	0 0	0	4.33	....
1915	90 11	278	16 8	63	33 11	107	23 14	67	11 6	29	4 10	11	0 0	0	0 10	1	0 0	0	0 0	0	0 0	0	5.00	....
Average	45.3	136	10.5	44	11.4	37	8.8	24	6.8	17	3.7	8	2.7	5	0.2	0.3	0.6	1	0	0	0	0	2.92	....
Cull fruits—																								
1912	16 2	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	8 6	81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1914	2 2	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
1915	2 5	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.67	....
Average	7.2	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.42	....

Total crop—																														
1912	116	2	252	2	0	7	4	9	14	8	2	22	24	5	59	18	9	40	23	6	46	3	14	7	11	0	18	4	3	6	0	0	0	1.00	23
1913	124	15	501	52	0	228	34	2	112	15	4	43	13	5	33	1	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.78	14
1914	132	11	333	17	11	58	34	8	93	27	6	67	29	10	64	15	14	31	4	14	9	0	0	0	0	10	1	0	0	0	0	0	0	4.11	42
1915	197	3	581	18	3	70	39	4	127	49	9	148	63	6	170	18	3	43	4	11	10	1	10	3	0	0	0	0	0	0	0	0	0	5.22	68
Average	**142.7**		**417**	**22.5**		**91**	**28.1**		**87**	**25.1**		**70**	**32.7**		**82**	**13.6**		**30**	**8.2**		**16**	**1.4**		**3**	**2.9**		**5**	**1.1**		**2**	**0**		**0**		**3.03**	**38**
28, tree No. 23-75-24, Sporting strain:																																			
Orchard grade—																																			
1912	133	2	324	4	4	17	17	8	53	16	0	44	39	13	98	21	15	48	25	8	50	2	14	5	5	4	9	0	0	0	0	0	0	2.00	....
1913	104	6	346	42	6	164	36	7	114	17	9	48	7	1	18	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1914	89	2	263	42	14	143	24	4	68	12	15	32	8	2	18	0	7	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
1915	85	8	227	1	11	6	11	13	36	21	6	61	37	2	94	10	1	23	2	14	6	0	9	1	0	0	0	0	0	0	0	0	0	6.00	....
Average	103.0		290	22.8		83	22.5		68	17.0		46	23.0		57	8.3		19	7.2		14	0.9		2	1.3		2	0		0	0		0	0	4.17	....
Standard grade—																																			
1912	19	11	47	1	5	5	2	0	6	2	15	8	5	1	12	3	6	7	3	13	7	0	9	1	0	10	1	0	0	0	0	0	0	2.33	....
1913	31	10	136	26	6	120	3	13	12	1	1	3	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1914	24	1	80	12	6	48	6	4	19	1	8	4	3	8	8	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1915	60	0	176	6	8	27	13	0	43	20	5	58	11	11	30	4	14	11	2	8	5	1	2	2	0	0	0	0	0	0	0	0	0	6.00	....
Average	33.8		110	11.6		50	6.3		20	6.5		18	5.2		13	2.2		5	1.6		3	0.4		1	0.2		0.3	0		0	0		0	0	4.00	....
Cull fruits—																																			
1912	12	0	30																															1.33	....
1913	4	6	66																															5.33	....
1914	1	0	6																															3.33	....
1915	2	5	22																															5.33	....
Average	4.9		31																															3.83	....
Total crop—																																			
1912	164	13	401	5	9	22	19	8	59	18	15	52	44	14	110	25	5	55	29	5	57	3	7	6	5	14	10	0	0	0	0	0	0	1.89	14
1913	140	6	548	68	12	284	40	4	126	18	10	51	7	7	19	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.56	22
1914	114	3	349	55	4	191	30	8	87	14	7	36	11	10	26	0	14	2	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.78	39
1915	147	13	425	8	3	33	24	13	79	41	11	119	48	13	124	14	15	34	5	6	11	1	11	3	0	0	0	0	0	0	0	0	0	5.77	63
Average	**141.8**		**431**	**34.4**		**133**	**28.8**		**88**	**23.4**		**65**	**28.2**		**70**	**10.5**		**23**	**8.8**		**17**	**1.3**		**2**	**1.5**		**3**	**0**		**0**	**0**		**0**		**4.00**	**35**
29, tree No. 23-75-22, Valencia strain:																																			
Orchard grade—																																			
1912	65	12	162	1	12	7	9	9	30	6	12	19	21	6	53	9	2	20	12	7	25	2	4	4	2	8	4	0	0	0	0	0	0	2.33	....
1913	111	11	383	46	12	187	38	10	125	13	12	39	10	4	27	1	13	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1914	79	9	233	30	10	104	25	11	72	14	2	36	8	3	19	0	7	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1915	101	6	260	0	4	1	6	8	20	19	8	56	49	10	126	16	6	38	7	8	16	1	10	3	0	0	0	0	0	0	0	0	0	4.33	....
Average	89.6		260	19.8		75	20.1		62	13.5		38	22.4		56	6.9		16	5.2		11	0.9		2	0.6		1	0		0	0		0	0	3.67	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
29, tree No. 23-75-22, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	60 3	157	8 13	33	9 0	27	8 0	22	14 15	37	7 0	15	8 3	16	1 2	2	3 2	5	0 0	0	0 0	0	4.67	....
1913	23 12	105	18 14	89	4 3	14	0 11	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.33	....
1914	30 10	98	13 12	53	6 9	20	2 9	7	5 4	13	2 0	4	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	68 10	185	2 0	9	10 10	36	14 0	41	20 15	54	13 6	31	4 1	8	2 6	4	1 4	2	0 0	0	0 0	0	5.33	....
Average	45.8	136	10.9	46	7.6	24	6.3	18	10.3	26	5.6	13	3.2	6	1.1	2	1.1	2	0	0	0	0	4.67	....
Cull fruits—																								
1912	11 7	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.67	....
1913	4 13	62	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.67	....
1914	1 2	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1915	3 2	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
Average	5.1	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.17	....
Total crop—																								
1912	137 6	348	10 9	40	18 9	57	14 12	41	36 5	90	16 2	35	20 10	41	3 6	6	5 10	9	0 0	0	0 0	0	3.22	2
1913	140 4	550	65 10	276	42 13	139	14 7	41	10 4	27	1 13	4	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.22	11
1914	111 5	338	44 6	157	32 4	92	16 11	43	13 7	32	2 7	5	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	3.56	27
1915	173 2	459	2 4	10	17 2	56	33 8	97	70 9	180	29 12	69	11 9	24	4 0	7	1 4	2	0 0	0	0 0	0	4.33	44
Average	140.5	424	30.7	121	27.7	86	19.8	56	32.6	82	12.5	28	8.4	17	1.8	3	1.7	3	0	0	0	0	3.83	21
30, tree No. 23-91-2, Valencia strain:																								
Orchard grade—																								
1912	60 0	122	1 0	4	2 5	7	1 10	4	8 5	20	6 0	13	26 2	50	2 14	5	8 4	14	3 8	5	0 0	0	0	....
1913	80 10	292	45 11	186	21 12	70	6 14	20	5 14	15	0 0	0	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	103 15	312	46 6	160	34 10	97	13 2	33	7 15	18	1 14	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	96 8	305	22 6	82	31 8	103	21 6	64	18 4	49	3 0	7	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.00	....
Average	85.3	258	28.9	108	22.6	69	10.8	30	10.1	26	2.7	6	6.6	13	0.7	1	2.1	4	0.9	1	0	0	3.17	....

| | | |

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
31, tree No. 23-93-5, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	166 12	372	1 14	7	6 8	20	7 0	20	39 7	96	35 2	76	43 0	83	5 11	10	11 9	2	0 0	0	0 0	0	1.22	2
1913	113 8	422	40 7	175	31 9	102	11 15	34	17 15	46	7 14	18	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	3.78	1
1914	140 5	407	41 12	142	43 5	122	34 12	87	16 14	39	1 6	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	3
1915	138 7	382	8 14	33	23 6	74	31 7	89	48 1	123	22 5	50	4 0	8	0 0	0	0 0	0	0 0	0	0 0	0	4.89	2
Average	**139.8**	**396**	**23.2**	**89**	**26.2**	**79**	**21.3**	**58**	**30.6**	**76**	**16.7**	**37**	**12.0**	**23**	**1.4**	**3**	**2.9**	**5**	**0**	**0**	**0**	**0**	**3.31**	**3**
32, tree No. 23-85-10, Valencia strain:																								
Orchard grade—																								
1912	91 5	204	0 15	3	6 9	19	5 14	16	26 15	65	18 15	41	23 10	46	2 11	5	3 0	5	2 0	3	0 12	1	.67	....
1913	96 9	295	23 6	101	20 5	67	12 8	36	20 11	52	8 5	18	7 3	14	2 15	5	1 4	2	0 0	0	0 0	0	3.67	....
1914	111 4	302	30 2	96	36 15	102	25 2	62	16 1	36	3 0	6	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1915	119 11	319	1 10	6	5 14	20	18 12	57	58 5	155	25 1	59	9 9	21	0 8	1	0 0	0	0 0	0	0 0	0	3.33	....
Average	104.7	280	14.0	52	17.4	52	15.6	43	30.5	77	13.8	31	10.1	20	1.5	3	1.1	2	0.5	1	0.2	0.3	3.09	....
Standard grade—																								
1912	19 1	46	4 5	14	1 10	5	2 5	6	3 10	8	1 15	4	2 4	4	1 12	3	1 4	2	0 0	0	0 0	0	1.67	....
1913	19 1	77	12 11	60	1 12	6	2 4	6	0 14	2	1 0	2	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1914	16 11	53	5 15	23	7 11	22	1 13	5	1 4	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	64 15	195	10 10	41	24 0	75	13 2	37	13 1	33	2 10	6	1 8	3	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
Average	29.9	93	8.4	35	8.8	27	4.9	14	4.7	12	1.4	3	1.1	2	0.2	1	0.1	0.5	0	0	0	0	3.84	....
Cull fruits—																								
1912	7 0	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	7 9	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.33	....
1914	2 8	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.33	....
1915	0 12	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
Average	4.5	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....

Total crop—																														
1912	117	6	267	5	4	17	8	3	24	8	3	22	30	9	73	20	14	45	25	14	50	4	7	8	4	4	7	2	0	3	0	12	1	1.33	0
1913	123	3	450	36	1	161	22	1	73	14	12	42	21	9	54	9	5	20	7	11	15	2	15	5	1	4	2	0	0	0	0	0	0	4.22	3
1914	130	7	368	36	1	119	44	10	124	26	15	67	17	5	39	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.11	6
1915	185	6	518	12	4	47	29	14	95	31	14	94	71	6	188	27	11	65	11	1	24	0	8	1	0	0	0	0	0	0	0	0	0	3.56	8
Average	**139.1**		**401**	**22.4**		**86**	**26.2**		**79**	**20.4**		**56**	**35.2**		**89**	**15.2**		**34**	**11.2**		**22**	**2.0**		**4**	**1.4**		**2**	**0.5**		**1**	**0.2**	**0.3**	**3.31**	**4**
33, tree No. 23-87-6, Valencia strain:																																			
Orchard grade—																																			
1912	77	3	158	0	4	1	1	12	5	3	3	8	15	6	38	11	0	24	27	3	52	5	9	10	7	14	13	5	0	7	0	0	0	.33	....
1913	98	2	343	45	4	190	30	1	95	11	14	33	6	13	17	1	14	4	1	9	3	0	0	0	0	11	1	0	0	0	0	0	0	3.33	....
1914	129	15	393	44	6	180	41	13	113	24	15	60	13	12	30	4	8	9	0	0	0	0	9	1	0	0	0	0	0	0	0	0	0	3.66	....
1915	125	5	353	11	10	43	21	0	68	27	10	81	47	0	121	11	6	26	5	10	12	1	1	2	0	0	0	0	0	0	0	0	0	5.33	....
Average	107.6		312	25.4		104	23.7		70	16.8		46	20.7		52	7.2		16	8.6		17	1.8		3	2.1		4	1.3		2	0		0	3.16	....
Standard grade—																																			
1912	35	13	75	0	7	2	1	6	4	3	5	9	5	13	14	4	14	10	11	7	21	3	5	6	5	4	9	0	0	0	0	0	0	1.00	....
1913	17	5	84	13	9	76	1	4	4	0	0	0	0	7	1	0	0	0	0	9	1	0	0	0	0	0	0	0	0	0	1	8	2	3.00	....
1914	11	2	35	6	12	25	1	12	5	0	6	1	0	7	1	0	0	0	0	9	1	0	0	0	1	4	2	0	0	0	0	0	0	3.00	....
1915	25	0	81	7	6	30	8	0	26	4	15	14	1	15	5	2	3	5	0	0	0	0	9	1	0	0	0	0	0	0	0	0	0	5.33	....
Average	22.3		69	6.9		33	3.1		10	2.2		6	2.2		5	1.8		4	3.1		6	1.0		2	1.6		3	0		0	0.5	0.5	3.08	....
Cull fruits—																																			
1912	15	2	32																															2.33	....
1913	3	9	43																															2.33	....
1914	2	5	16																															4.00	....
1915	14	4	12																															5.00	....
Average	8.8		26																															3.42	....
Total crop—																																			
1912	128	2	265	0	11	3	3	2	9	6	8	17	21	3	52	15	14	34	38	10	73	8	14	16	13	2	22	5	0	7	0	0	0	1.22	6
1913	119	0	470	58	13	266	31	5	99	11	14	33	7	4	18	1	14	4	2	2	4	0	0	0	0	11	1	0	0	0	1	8	2	2.89	2
1914	143	6	444	51	2	205	43	9	118	25	5	61	14	3	31	4	8	9	0	9	1	0	9	1	1	4	2	0	0	0	0	0	0	3.56	15
1915	164	9	446	19	0	73	29	0	94	32	9	95	48	15	126	13	9	31	5	10	12	1	10	3	0	0	0	0	0	0	0	0	0	5.22	7
Average	**138.8**		**406**	**32.4**		**137**	**26.8**		**80**	**19.1**		**52**	**22.9**		**57**	**9.0**		**20**	**11.7**		**23**	**2.8**		**5**	**3.8**		**6**	**1.3**		**2**	**0.4**	**0.5**	**3.22**	**8**
34, tree No. 23-91-5, Valencia strain:																																			
Orchard grade—																																			
1912	108	13	266	3	7	13	9	4	29	12	15	37	32	0	80	24	6	54	20	0	40	3	13	7	2	5	5	0	11	1	0	0	0	.67	....
1913	68	2	235	26	13	110	21	13	72	11	12	34	6	11	17	0	8	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1914	129	11	427	79	14	288	32	8	95	14	13	38	2	8	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.00	....
1915	83	0	239	7	9	27	15	4	49	29	4	85	26	8	68	3	15	9	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	6.33	....
Average	97.4		292	29.4		110	19.7		61	17.2		49	16.9		43	7.2		16	5.3		11	1.0		2	0.6		1	0.2		0.3	0		0	4.33	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
34. tree No. 23-91-5, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	62 4	151	4 4	16	5 0	15	12 7	34	14 11	36	7 0	15	11 15	23	1 1	2	5 14	10	0 0	0	0 0	0	1.33	....
1913	36 2	130	25 11	116	3 6	11	0 11	2	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.33	....
1914	24 4	97	20 12	86	2 12	9	0 6	1	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1915	27 10	94	9 2	37	9 6	32	5 8	16	1 15	5	1 11	4	0 0	0	0. 0	0	0. 0	0	0 0	0	0 0	0	6.00	....
Average	36.1	118	15.0	64	5.1	17	4.8	13	4.3	11	2.2	5	3.0	6	0.3	0.5	1.5	3	0	0	0	0	4.33	....
Cull fruits—																								
1912	10 11	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
1913	3 10	68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.33	....
1914	3 3	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
1915	3 4	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.33	....
Average	5.2	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.17	....
Total crop—																								
1912	181 12	445	7 11	29	14 4	44	25 6	71	46 11	116	31 6	69	31 15	63	4 14	9	8 3	15	0 11	1	0 0	0	1.33	0
1913	101 14	433	52 8	226	25 3	83	12 7	36	7 1	18	0 8	1	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	5.00	0
1914	157 2	549	100 10	374	35 4	104	15 3	39	2 14	7	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.89	6
1915	113 14	351	16 11	64	24 10	81	34 12	101	28 7	73	5 10	13	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	5.89	1
Average	**138.7**	**445**	**44.4**	**173**	**24.9**	**78**	**21.9**	**62**	**21.3**	**54**	**9.4**	**21**	**8.3**	**16**	**1.2**	**2**	**2.1**	**4**	**0.2**	**0.3**	**0**	**0**	**4.28**	**2**
35, tree No. 23-88-6, Valencia strain:																								
Orchard grade—																								
1912	100 9	227	2 6	8	6 2	18	9 13	26	28 3	67	24 4	52	22 2	43	3 5	6	2 6	4	2 0	3	0 0	0	1.00	....
1913	55 6	164	12 10	53	10 1	32	6 15	19	18 7	45	4 2	9	2 10	5	0 9	1	0 0	0	0 0	0	0 0	0	2.33	....
1914	173 11	573	115 2	410	41 11	120	14 6	37	2 8	6	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
1915	103 13	28 (	4 0	15	11 4	36	23 2	68	45 14	117	14 15	34	4 10	10	0 0	0	0 0	0	0 0	0	0 0	0	6.67	....
Average	108.4	311	33.5	122	17.3	52	13.6	38	23.8	59	10.8	24	7.3	15	1.0	2	0.6	1	0.5	1	0	0	3.75	....

| | | |

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Total.		Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
			288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
36, tree No. 23-91-8, Valencia strain—Continued.																								
Total crop—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	127 12	271	2 7	8	3 13	11	9 5	25	17 6	42	20 1	43	35 4	67	4 3	7	13 11	23	1 6	2	0 0	0	0.78	5
1913	101 8	431	53 4	226	22 6	71	12 14	36	4 13	12	2 5	5	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	3.78	1
1914	146 11	425	49 2	167	44 14	127	31 5	79	15 14	36	2 6	5	1 10	3	0 0	0	0 0	0	0 0	0	0 0	0	2.67	22
1915	165 5	508	20 8	77	44 15	147	42 11	125	43 1	113	10 9	25	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	5.00	24
Average	135.3	409	31.3	120	29.0	89	24.1	66	20 3	51	8.8	20	9.7	19	1.0	2	3.4	6	0.3	0.5	0	0	3.06	12
37, tree No. 23-93-7, Valencia strain:																								
Orchard grade—																								
1912	30 5	48	0 0	0	0 0	0	0 0	0	0 7	1	1 7	3	3 6	6	2 6	4	6 10	11	16 1	23	0 0	0	0	....
1913	78 11	267	28 8	117	24 14	81	12 4	36	8 2	22	3 0	7	1 6	3	0 0	0	0 9	1	0 0	0	0 0	0	2.00	....
1914	73 15	195	12 10	42	19 0	52	18 12	46	15 8	34	7 8	15	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1915	134 6	390	12 3	44	22 8	73	37 14	113	49 14	132	9 4	22	2 11	6	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
Average	79.3	224	13.3	51	16.6	52	17.2	49	18.5	47	5.3	12	2.0	4	0.6	1	1.8	3	4.0	6	0	0	2.50	....
Standard grade—																								
1912	52 2	98	0 6	0	0 5	1	2 3	6	3 7	8	10 12	22	16 11	31	0 10	1	18 2	29	0 0	0	0 0	0	.33	....
1913	29 13	132	25 2	118	3 2	10	0 10	2	0 8	1	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1914	58 2	154	9 12	35	10 14	32	10 2	26	16 10	39	8 2	17	2 10	5	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	40 12	138	8 5	35	21 10	73	7 15	23	2 0	5	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
Average	45 2	131	10.8	47	9.0	29	5.2	14	5 6	13	5.1	11	4.8	9	0.2	0.3	4.5	7	0	0	0	0	2.42	....
Cull fruits—																								
1912	31 1	55	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.67	....
1913	4 6	63	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5.00	....
1914	1 2	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.67	....
1915	2 9	13	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5.33	....
Average	9.8	34	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.42	....

Total crop—																														
1912	113	8	201	0	0	0	0	5	1	2	3	6	3	14	9	12	3	25	20	1	37	3	0	5	24	12	40	16	1	23	0	0	0	.33	1
1913	112	14	462	53	10	235	28	0	91	12	14	38	8	10	23	3	7	8	1	6	3	0	0	0	0	9	1	0	0	0	0	0	0	3.11	4
1914	133	3	348	22	6	77	29	14	84	28	14	72	32	2	73	15	10	32	3	3	6	0	0	0	0	0	0	0	0	0	0	0	0	3.00	14
1915	177	11	541	20	8	79	44	2	146	45	13	136	51	14	137	10	2	24	2	11	6	0	0	0	0	0	0	0	0	0	0	0	0	4.67	12
Average	**134.3**		**388**	**24.1**		**98**	**25.6**		**81**	**22.4**		**63**	**24.1**		**61**	**10.3**		**22**	**6.8**		**13**	**0.8**		**1**	**6.3**		**10**	**4.0**		**6**	**0**		**0**	**2.78**	**8**
38, tree No. 23-90-10, Valencia strain:																																			
Orchard grade—																																			
1912	82	11	178	0	4	1	1	11	5	2	14	8	11	11	29	23	15	53	30	0	61	3	15	7	6	7	11	1	14	3	0	0	0	.33	....
1913	73	12	314	33	0	137	10	14	99	11	6	32	14	5	37	3	3	7	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1914	120	2	376	69	12	239	34	4	97	14	4	36	1	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	108	15	291	4	11	17	13	11	42	22	4	63	50	11	130	13	11	31	3	6	7	0	9	1	0	0	0	0	0	0	0	0	0	3.33	....
Average	96.4		290	26.9		99	15.1		61	12.7		35	19.6		50	10.2		23	8.6		18	1.1		2	1.6		3	0.5		1	0		0	3.17	....
Standard grade—																																			
1912	63	11	132	1	4	4	1	5	4	3	8	9	14	13	35	10	5	22	22	2	40	1	2	2	9	4	16	0	0	0	0	0	0	1.67	....
1913	17	12	77	13	15	65	2	6	8	1	1	3	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1914	13	10	50	8	14	37	2	13	9	0	6	1	0	7	1	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	34	11	104	14	2	18	8	11	28	10	3	29	7	11	20	3	8	8	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
Average	32.4		91	9.5		31	3.8		12	3.8		11	5.8		14	3.5		8	5.9		11	0.3		0.5	2.3		4	0		0	0		0	4.09	
Cull fruits—																																			
1912	15	5	32																															.33	....
1913	3	13	52																															6.00	....
1914	0	10	3																															2.00	....
1915	0	11	5																															4.33	....
Average	5.1		23																															3.17	....
Total crop—																																			
1912	161	11	342	1	8	5	3	0	9	6	6	17	26	8	64	34	4	75	52	2	101	5	1	9	15	11	27	1	14	3	0	0	0	.78	1
1913	95	5	443	46	15	202	13	4	107	12	7	35	14	11	38	3	3	7	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5.11	0
1914	134	6	429	78	10	276	37	1	106	14	10	37	2	5	5	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	3.89	5
1915	144	5	400	8	13	35	22	6	70	32	7	92	58	6	150	17	3	39	3	14	8	0	9	1	0	0	0	0	0	0	0	0	0	4.11	7
Average	**133.9**		**404**	**34.0**		**130**	**18.9**		**73**	**16.5**		**45**	**25.5**		**64**	**12.7**		**30**	**14.5**		**28**	**1.4**		**3**	**3.9**		**7**	**0.5**		**1**	**0**		**0**	**3.47**	**3**
39, tree No. 23-76-17, Valencia strain:																																			
Orchard grade—																																			
1912	82	2	183	0	4	1	2	11	9	5	2	15	16	4	41	19	15	44	26	0	52	6	2	11	5	2	9	0	10	1	0	0	0	1.33	....
1913	117	8	379	34	7	133	43	7	137	23	5	67	15	14	41	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1914	92	12	235	15	0	48	19	12	54	29	10	72	22	14	50	3	14	8	1	10	3	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	127	14	336	2	8	9	13	2	42	24	4	70	55	2	142	19	9	45	11	4	24	2	1	4	0	0	0	0	0	0	0	0	0	6.67	....
Average	105.1		283	13.1		48	19.8		61	20.6		56	27.5		69	11.0		25	9.7		20	2.0		4	1.3		2	0.2		0.3	0		0	3.83	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
39, tree No. 23-76-17, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	19 7	45	0 15	3	1 6	4	1 10	4	6 8	16	3 14	8	4 9	9	0 9	1	0 0	0	0 0	0	0 0	0	0.33	....
1913	25 7	109	20 6	92	4 7	15	0 10	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1914	11 3	33	2 4	9	5 1	15	0 12	2	2 3	5	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1915	32 7	101	2 14	13	11 0	37	9 10	28	7 10	20	0 13	2	0 0	0	0 8	1	0 0	0	0 0	0	0 0	0	4.67	....
Average	22.1	72	6.6	29	5.5	18	3.2	9	4.1	10	1.4	3	1.1	2	0.3	0.5	0	0	0	0	0	0	3.25	....
Cull fruits—																								
1912	0 5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	4 11	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.67	....
1914	0 8	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1915	2 7	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
Average	2.0	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.92	....
Total crop—																								
1912	101 14	230	1 3	4	4 1	13	6 12	19	22 12	57	23 13	52	30 9	61	6 11	12	5 2	9	0 10	1	0 0	0	.71	0
1913	147 10	551	54 13	225	47 14	152	23 15	69	15 14	41	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.11	0
1914	104 7	271	17 4	57	24 13	69	30 6	74	25 1	55	4 13	10	1 10	3	0 0	0	0 0	0	0 0	0	0 0	0	3.56	2
1915	162 12	450	5 6	22	24 2	79	33 14	98	62 12	162	20 6	47	11 4	24	2 9	5	0 0	0	0 0	0	0 0	0	5.11	4
Average	**129.2**	**376**	**19.7**	**77**	**25.2**	**78**	**23.7**	**65**	**31.6**	**79**	**12.4**	**28**	**10.9**	**22**	**2.3**	**4**	**1.3**	**2**	**0.2**	**0.3**	**0**	**0**	**3.33**	**2**
40, tree No. 23-76-18, Corrugated strain:																								
Orchard grade—																								
1912	35 0	93	1 0	4	5 3	17	8 7	24	10 12	27	7 1	16	2 9	5	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1913	38 1	116	8 7	32	11 12	37	9 7	27	7 8	18	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1914	42 3	122	16 14	57	11 12	32	8 4	21	3 13	9	1 8	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
1915	34 8	81	0 3	1	0 9	2	3 4	9	12 8	31	8 14	20	8 0	16	1 2	2	0 0	0	0 0	0	0 0	0	4.67	....
Average	37.4	103	6.6	24	7.4	22	7.3	20	8.6	21	4.6	10	2.6	5	0.3	0.5	0	0	0	0	0	0	3.59	....

Standard grade—																														
1912	120	1	291																									1.33		
1913	77	5	263																									4.33		
1914	87	15	253	26	6	94	20	5	59	14	0	37	17	2	41	5	6	12	4	3	9	0	9	1	0	0	0	0	0	0	1.67		
1915	74	4	188	1	13	7	7	3	24	17	0	47	20	3	50	21	10	48	4	0	8	1	12	3	0	11	1	0	0	0	2.00		
Average	89.9		249																										2.33		
Cull fruits—																														
1912	0	0	0																									0		
1913	2	8	35																									4.00		
1914	0	4	4																									2.67		
1915	0	8	3																									2.00		
Average	0	8	11																									2.17		
Total crop—																														
1912	155	1	384																									1.11	116	
1913	117	14	414																									3.67	202	
1914	130	6	379	43	4	151	32	1	91	22	4	58	20	15	50	6	14	15	4	3	9	0	9	1	0	0	0	0	0	0	3.11	155	
1915	109	4	272	2	0	8	7	12	26	20	4	56	32	11	81	30	8	68	12	0	24	2	14	5	0	11	1	0	0	0	2.89	146	
Average	128.1		362																										2.70	155	
41, tree No. 23-87-7, Corrugated strain:																														
Orchard grade—																														
1912	28	12	74	1	1	4	4	3	13	5	10	16	8	6	21	3	9	8	4	4	9	0	8	1	0	9	1	0	10	1	0	0	0	1.33		
1913	22	12	65	3	15	15	7	10	23	3	6	9	5	7	13	1	14	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	1.33		
1914	18	8	55	6	3	22	8	12	24	3	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33		
1915	17	6	40	0	4	2	1	3	4	0	11	2	5	6	13	3	6	7	3	0	6	2	13	5	0	0	0	0	11	1	0	0	0	4.33		
Average	21.8		59	2.9		11	5.4		16	3.3		9	4.8		12	2.2		5	1.9		4	0.8		2	0.1		0.3	0.3		0.5	0		0	2.33		
Standard grade—																														
1912	137	15	386																										3.33		
1913	124	13	362																										3.33		
1914	103	15	329	49	12	179	32	13	96	13	8	36	6	0	14	1	6	3	0	8	1	0	0	0	0	0	0	0	0	0	1.67		
1915	44	2	108	2	0	8	4	13	15	8	2	22	6	6	16	16	3	35	3	2	6	2	4	4	1	4	2	0	0	0	0	0	0	2.33		
Average	102.7		296																										2.67		
Cull fruits—																														
1912	0	0	0																										0		
1913	2	0	19																										1.67		
1914	2	1	13																										4.67		
1915	1	0	3																										1.67		
Average	1.3		9																										2.00		

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
41, tree No. 23-87-7, Corrugated strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	166 11	460	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.55	116
1913	149 9	446	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.11	117
1914	124 8	397	55 15	201	41 9	120	17 1	45	6 0	14	1 6	3	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.89	75
1915	62 8	151	2 4	10	6 0	19	8 13	24	11 12	29	19 9	42	6 2	12	5 1	9	1 4	2	0 11	1	0 0	0	2.78	58
Average	**125.8**	**364**	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	**2.33**	**91**
42, tree No. 23-89-2, Valencia strain:																								
Orchard grade—																								
1912	46 3	101	0 4	1	2 0	6	2 7	7	7 14	20	10 4	23	13 15	28	2 2	4	5 6	9	1 15	3	0 0	0	2.67	....
1913	91 13	331	47 6	198	27 14	89	9 10	27	6 0	15	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1914	121 9	379	61 13	227	33 4	94	17 10	45	4 13	11	0 8	1	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
1915	55 9	145	1 5	5	6 14	22	9 4	27	23 8	60	7 15	18	4 14	10	1 2	2	0 11	1	0 0	0	0 0	0	2.67	....
Average	78.8	239	28.4	108	17.5	53	9.7	27	10.5	27	4.9	11	4.8	10	0.8	2	1.5	3	0.5	1	0	0	3.25	....
Standard grade—																								
1912	66 11	152	5 3	16	3 1	9	7 9	20	18 2	42	12 12	27	15 6	30	1 0	2	3 10	6	0 0	0	0 0	0	.67	....
1913	29 10	138	25 15	126	2 12	10	0 6	1	0 0	0	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1914	20 1	76	13 11	56	5 12	18	0 10	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
1915	48 0	136	3 2	14	11 2	37	11 8	33	11 5	29	7 2	16	2 1	4	1 2	2	0 10	1	0 0	0	0 0	0	3.67	....
Average	41.1	126	12.0	53	5.7	19	5.0	14	7.4	18	5.1	11	4.4	9	0.5	1	1.1	2	0	0	0	0	3.17	....
Cull fruits—																								
1912	11 13	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	7 8	125	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1914	1 4	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.67	....
1915	1 8	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.67	....
Average	5.5	43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.78	....

Total crop—																														
1912	124	11	285	5	7	17	5	1	15	10	0	27	26	0	62	23	0	50	29	5	58	3	2	6	9	0	15	1	15	3	0	0	0	1.00	6
1913	128	15	594	73	5	324	30	10	99	10	0	28	6	0	15	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.11	7
1914	142	14	464	78	8	283	39	0	112	18	4	47	4	13	11	0	8	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	5.33	136
1915	105	1	287	4	7	19	18	0	59	20	12	60	34	13	89	15	1	34	6	15	14	2	4	4	1	5	2	0	0	0	0	0	0	3.67	45
Average	**125.4**		**408**	**40.4**		**161**	**23.2**		**71**	**14.8**		**41**	**17.9**		**44**	**10.0**		**22**	**9.2**		**18**	**1.3**		**3**	**2.6**		**4**	**0.5**		**1**	**0**		**0**	**3.04**	**49**
43, tree No. 23-93-8, Valencia strain:																																			
Orchard grade—																																			
1912	37	7	70	0	4	1	0	0	0	0	12	2	6	2	14	2	12	6	9	6	18	1	11	3	9	10	16	6	14	10	0	0	0	0	....
1913	87	2	260	11	15	49	27	4	88	17	5	50	18	1	46	9	8	21	2	8	5	0	0	0	0	9	1	0	0	0	0	0	0	2.00	....
1914	101	1	277	27	5	91	27	4	77	27	0	68	15	4	33	2	0	4	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	138	3	353	5	13	20	9	9	29	22	6	64	63	3	160	22	9	51	10	11	22	4	0	7	0	0	0	0	0	0	0	0	0	4.00	....
Average	91.0		240	11.3		40	16.0		49	16.9		46	25.7		63	9.2		21	6.2		12	1.4		3	2.5		4	1.7		3	0		0	2.17	....
Standard grade—																																			
1912	31	7	62	0	4	1	1	0	3	1	2	3	3	4	8	4	4	9	10	5	19	2	12	5	8	8	14	0	0	0	0	0	0	.33	....
1913	30	0	113	17	6	75	7	8	24	3	15	11	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....
1914	19	0	63	11	11	44	3	15	12	1	4	3	0	7	1	0	8	1	0	9	1	0	10	1	0	0	0	0	0	0	0	0	0	5.00	....
1915	41	13	120	3	5	13	10	0	33	14	3	40	7	3	18	6	2	14	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
Average	30.6		90	8.2		33	5.6		18	5.1		14	3.0		8	2.9		6	3.0		6	0.8		2	2.1		4	0		0	0		0	2.42	....
Cull fruits—																																			
1912	7	1	11	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.33	....
1913	3	13	46	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	2.33	....
1914	1	10	8	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.67	....
1915	2	4	10	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	2.67	....
Average	3.7		19	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	2.00	....
Total crop—																																			
1912	75	15	143	0	8	2	1	0	3	1	14	5	9	6	22	7	0	15	19	11	37	4	7	8	18	2	30	6	14	10	0	0	0	.56	1
1913	120	15	419	29	5	124	34	12	112	21	4	61	19	4	49	9	8	21	2	8	5	0	0	0	0	9	1	0	0	0	0	0	0	1.78	0
1914	121	11	348	39	0	135	31	3	89	28	4	71	15	11	34	2	8	5	2	13	5	0	10	1	0	0	0	0	0	0	0	0	0	3.11	1
1915	182	4	483	9	2	33	19	9	62	36	9	104	70	6	178	28	11	65	11	11	24	4	0	7	0	0	0	0	0	0	0	0	0	3.33	2
Average	**125.2**		**348**	**19.5**		**74**	**21.6**		**67**	**22.0**		**60**	**28.7**		**71**	**11.9**		**27**	**9.2**		**18**	**2.3**		**4**	**4.7**		**8**	**1.7**		**3**	**0**		**0**	**2.19**	**1**
44, tree No. 23-90-7, Sporting strain:																																			
Orchard grade—																																			
1912	44	1	93	0	9	2	1	10	5	0	7	1	9	6	23	9	0	20	10	1	20	3	4	6	5	11	10	4	1	6	0	0	0	2.00	....
1913	75	12	257	27	4	114	24	11	80	10	7	30	9	3	24	2	11	6	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	2.00	....
1914	66	14	168	11	0	35	14	2	39	17	15	44	16	8	36	5	9	11	1	12	3	0	0	0	0	0	0	0	0	0	0	0	0	2.00	....
1915	44	3	115	0	12	3	4	12	15	7	2	21	15	6	40	10	0	23	5	10	12	0	9	1	0	0	0	0	0	0	0	0	0	3.00	....
Average	57.7		158	9.9		39	11.3		35	9.0		24	12.6		31	6.8		15	4.7		10	1.0		2	1.4		3	1.0		2	0		0	2.25	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
44, tree No. 23-90-7, Sporting strain—Continued.																								
Standard grade—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	49 12	104	1 10	6	1 12	5	4 6	12	6 11	16	6 7	14	13 8	25	1 1	2	14 5	24	0 0	0	0 0	0	0.67	....
1913	35 12	158	27 11	135	4 3	14	1 15	5	0 8	1	0 6	1	1 1	2	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1914	52 5	140	9 2	34	10 3	31	8 2	22	10 8	24	7 6	16	4 8	9	0 0	0	0 10	1	1 14	3	0 0	0	3.67	....
1915	78 8	232	4 12	20	15 0	50	19 8	66	23 3	60	13 0	30	2 8	5	0 9	1	0 0	0	0 0	0	0 0	0	4.33	....
Average	54.1	159	10.8	49	7.8	25	8.5	25	10.2	25	6.8	15	5.4	10	0.4	1	3.9	6	0.5	1	0	0	3.17	....
Cull fruits—																								
1912	46 8	104																					0	....
1913	4 1	64																					2.67	....
1914	1 1	5																					4.67	....
1915	2 0	11																					2.00	....
Average	13.4	46																					2.34	....
Total crop—																								
1912	140 5	301	2 3	8	3 6	10	4 13	13	16 1	39	15 7	34	23 9	45	4 5	8	20 0	34	4 1	6	0 0	0	.89	104
1913	115 9	479	54 15	249	28 14	94	12 6	35	9 11	25	3 1	7	2 9	5	0 0	0	0 0	0	0 0	0	0 0	0	2.89	51
1914	120 4	313	20 2	69	24 5	70	26 1	66	27 0	60	12 15	27	6 4	12	0 0	0	0 10	1	1 14	3	0 0	0	3.45	111
1915	124 11	358	5 8	23	19 12	65	26 10	87	38 9	100	23 0	53	8 2	17	1 2	2	0 0	0	0 0	0	0 0	0	3.11	112
Average	125.2	363	20.7	87	19.1	60	17.5	50	22.8	56	13.6	30	10.1	20	1.3	3	5.2	9	1.5	2	0	0	2.59	95
45, tree No. 23-91-7, Valencia strain:																								
Orchard grade—																								
1912	37 9	82	1 5	5	2 4	7	2 3	6	6 15	17	4 14	11	9 4	19	0 9	1	3 9	6	6 10	10	0 0	0	2.33	....
1913	88 12	299	33 0	138	30 11	97	7 2	21	11 13	30	3 15	9	1 9	3	0 0	0	0 10	1	0 0	0	0 0	0	3.33	....
1914	74 5	214	22 6	77	26 6	75	14 9	37	10 8	24	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	53 6	141	2 4	8	4 8	14	9 6	27	23 13	62	11 8	26	1 15	4	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
Average	63.5	184	14.7	57	16.0	48	8.3	23	13.3	33	5.2	12	3.2	7	0.1	0.3	1.1	2	1.7	3	0	0	2.92	....

Standard grade—																																
1912	64	0	139	1	11	6	3	7	10	3	8	10	11	13	29	12	1	26	18	5	35	3	12	7	9	7	16	0	0	0	0	0	0	0	....
1913	30	7	130	22	4	105	5	12	18	2	0	6	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1914	53	4	182	30	13	120	13	2	41	3	0	8	2	1	5	2	0	4	2	4	4	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1915	50	6	149	6	6	27	15	10	51	10	6	30	11	13	29	4	8	10	1	0	2	0	0	0	0	11	1	0	0	0	0	0	3.00	....
Average	49.5		150	15.3		65	9.5		30	4.7		14	6.5		16	4.6		10	5.4		10	0.9		2	2.5		4	0		0	0		0	2.83	....
Cull fruits—																																
1912	38	6	89	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		0	....
1913	5	6	64	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		4.33	....
1914	1	6	8	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		2.00	....
1915	3	8	14	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		2.33	....
Average	12.2		44	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		2.17	....
Total crop—																																
1912	139	15	310	3	0	11	5	11	17	5	11	16	18	12	46	16	15	37	27	9	54	4	5	8	13	0	22	6	10	10	0	0	.78	45
1913	124	9	493	55	4	243	36	7	115	9	2	27	12	4	31	3	15	9	1	9	3	0	0	0	0	10	1	0	0	0	0	0	4.00	16
1914	128	15	404	53	3	197	39	8	116	17	9	45	12	9	29	2	8	5	2	4	4	0	0	0	0	0	0	0	0	0	0	0	2.78	100
1915	107	4	304	8	10	35	20	2	65	19	12	57	35	10	91	16	0	36	2	15	6	0	0	0	0	11	1	0	0	0	0	0	3.00	43
Average	125.2		378	30.0		122	25.4		78	13.0		36	19.8		49	9.8		22	8.6		17	1.1		2	3.6		6	1.7		3	0		0	2.64	51
46, tree No. 23-88-1, Valencia strain:																																
Orchard grade—																																
1912	72	12	172	2	11	11	7	13	24	5	4	15	18	2	44	12	15	28	19	7	39	2	12	5	2	6	4	1	6	2	0	0	1.00	....
1913	74	4	281	50	1	207	16	2	52	6	1	17	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1914	100	2	274	28	0	92	33	4	93	22	2	54	12	8	27	2	8	5	1	12	3	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1915	87	10	275	16	2	60	27	8	90	22	12	68	19	3	52	2	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
Average	83.7		251	24.2		93	21.2		65	14.0		39	13.0		32	4.4		10	5.3		11	0.7		1	0.6		1	0.3		0.5	0		0	3.42	....
Standard grade—																																
1912	56	2	125	1	15	8	2	1	6	8	4	22	11	15	28	12	8	26	11	13	22	1	11	3	5	15	10	0	0	0	0	0	1.33	....
1913	30	7	140	28	5	133	2	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1914	19	2	57	6	4	25	3	0	9	4	8	12	2	3	5	1	8	3	1	11	3	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	36	10	128	10	10	44	15	4	53	8	1	24	2	11	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
Average	35.6		113	11.8		53	5.6		19	5.2		15	4.2		10	3.5		7	3.4		6	0.2		1	1.5		3	0		0	0		0	3.67	....
Cull fruits—																																
1912	12	9	28	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		1.00	....
1913	5	4	66	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		5.67	....
1914	1	8	9	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		1.33	....
1915	2	0	10	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		5.67	....
Average	5.3		28	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		3.42	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
46, tree No. 23-88-1, Valencia strain—Continued.																								
Total crop—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	141 7	325	4 10	19	9 14	30	13 8	37	30 1	72	25 7	54	31 4	61	4 7	8	8 5	14	1 6	2	0 0	0	1.11	4
1913	109 15	487	78 6	340	18 4	59	6 1	17	2 0	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.75	1
1914	120 12	340	34 4	117	36 4	102	26 10	66	14 11	32	4 0	8	3 7	6	0 0	0	0 0	0	0 0	0	0 0	0	3.00	21
1915	126 4	413	26 12	104	42 12	143	30 13	92	21 14	59	2 1	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.33	13
Average	**124.6**	**391**	**36.0**	**145**	**26.8**	**84**	**19.0**	**53**	**17.2**	**42**	**7.9**	**17**	**8.7**	**17**	**1.1**	**2**	**2.1**	**4**	**0.3**	**0.5**	**0**	**0**	**3.55**	**10**
47, tree No. 23-85-7, Corrugated strain:																								
Orchard grade—																								
1912	18 1	39	0 0	0	0 10	2	1 14	5	3 2	8	3 5	7	7 5	14	0 0	0	1 2	2	0 11	1	0 0	0	.67	....
1913	31 1	89	5 5	22	6 4	20	5 6	15	7 7	18	3 11	8	3 0	6	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
1914	20 14	61	10 1	33	7 1	19	2 14	7	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.67	....
1915	43 8	103	0 0	0	2 0	7	2 4	7	15 3	39	8 13	20	8 14	18	6 6	12	0 0	0	0 0	0	0 0	0	6.33	....
Average	28.4	73	3.8	14	4.0	12	3.1	9	6.7	17	4.0	9	4.8	10	1.6	3	0.3	0.5	0.2	0.3	0	0	4.67	....
Standard grade—																								
1912	119 9	266	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	....
1913	76 2	216	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
1914	114 4	339	46 10	165	33 10	96	12 6	31	15 11	36	3 11	7	2 4	4	0 0	0	0 0	0	0 0	0	0 0	0	1.00	....
1915	63 14	161	4 1	15	8 10	26	10 12	29	14 6	36	18 2	40	4 15	10	2 5	4	0 11	1	0 0	0	0 0	0	2.67	....
Average	93.5	246	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.11	....
Cull fruits—																								
1912	2 13	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	3 4	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1914	2 7	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1915	0 10	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	....
Average	2.3	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.59	....

Total crop—																												
1912	140	7	314																							.67	63
1913	110	7	341																							3.00	158
1914	137	9	412	56	11	198	40	11	115	15	4	38	16	9	38	3	11	7	2	4	4	0	0	0	0	0	0	0	0	0	0	2.78	90
1915	108	0	267	4	1	15	10	10	33	13	0	36	29	9	75	26	15	60	13	13	28	8	11	16	0	11	1	0	0	0	0	0	3.33	135
Average	**124.1**		**334**																									**2.45**	**112**
48, tree No. 23-90-4, Valencia strain:																												
Orchard grade—																												
1912	77	9	171	2	2	8	6	15	22	3	4	9	13	2	32	13	2	35	19	11	38	5	3	9	9	1	15	2	1	3	0	0	0	.33	....
1913	60	7	202	24	13	99	18	11	59	8	10	24	5	6	14	1	13	4	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....
1914	119	14	377	66	11	233	36	3	102	11	14	30	5	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	79	11	223	5	1	19	11	2	36	22	8	66	31	1	80	6	9	15	3	6	7	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
Average	84.4		243	24.7		90	18.2		55	11.6		32	13.7		35	5.4		14	6.1		12	1.3		2	2.3		4	0.5		1	0		0	2.50	....
Standard grade—																												
1912	46	7	107	3	9	13	3	6	10	6	8	17	10	6	24	9	12	20	8	11	16	1	1	2	3	2	5	0	0	0	0	0	0	1.33	....
1913	21	9	91	16	15	77	2	2	7	1	14	5	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1914	20	14	77	14	0	57	4	8	14	1	10	2	1	4	3	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1915	51	8	159	5	7	23	17	15	59	18	0	52	6	12	17	3	6	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
Average	35.1		109	10.0		43	7.0		23	7.0		19	4.8		12	3.4		7	2.3		4	0.3		0.5	0.8		1	0		0	0		0	3.58	....
Cull fruits—																												
1912	8	8	17																									1.00	....
1913	5	4	86																									1.67	....
1914	1	12	9																									1.67	....
1915	2	6	14																									1.33	....
Average	4.5		32																									1.42	....
Total crop—																												
1912	132	8	295	5	11	21	10	5	32	9	12	26	23	8	56	25	14	55	28	6	54	6	4	11	12	3	20	2	1	3	0	0	0	.89	0
1913	87	4	379	41	12	176	20	13	66	10	8	29	6	0	16	1	13	4	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2.22	1
1914	142	8	463	80	11	290	40	11	116	12	8	32	6	6	15	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.22	35
1915	133	9	396	10	8	42	29	1	95	40	8	118	37	13	97	9	15	23	3	6	7	0	0	0	0	0	0	0	0	0	0	0	0	3.67	33
Average	**124.0**		**383**	**34.7**		**132**	**25.2**		**77**	**18.3**		**51**	**18.4**		**46**	**9.5**		**21**	**8.2**		**16**	**1.6**		**3**	**3.0**		**5**	**0.5**		**1**	**0**		**0**	**2.50**	**17**
49, tree No. 23-76-22, Valencia strain:																												
Orchard grade—																												
1912	64	13	122	0	0	0	0	5	1	2	3	6	5	14	14	7	13	17	17	15	35	2	12	5	13	12	23	14	3	21	0	0	0	1.00	....
1913	93	8	329	42	15	179	25	0	81	12	15	37	10	6	27	1	12	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	1.33	....
1914	73	13	205	18	3	62	21	0	59	22	4	56	9	14	23	2	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1915	67	9	184	2	12	10	10	14	34	14	10	42	29	7	76	6	15	16	2	15	6	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
Average	74.9		210	16.0		63	14.3		44	13.0		35	13.9		35	4.8		11	5.3		11	0.7		1	3.4		6	3.5		5	0		0	2.58	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
49, tree No. 23-76-22, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	24 8	49	0 8	2	0 5	1	1 4	3	2 10	6	1 14	4	9 12	19	1 2	2	7 1	12	0 0	0	0 0	0	1.00	....
1913	34 11	160	29 2	144	3 9	11	1 2	3	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1914	44 2	130	11 14	44	11 14	35	8 14	24	7 12	19	3 4	7	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1915	77 7	235	8 10	38	29 10	69	23 5	67	14 11	37	9 12	23	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
Average	45.2	144	12.5	57	9.1	29	8.6	24	6.5	16	3.7	9	2.7	5	0.3	0.5	1.8	3	0	0	0	0	3.17	....
Cull fruits—																								
1912	5 11	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.33	....
1913	3 13	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1914	1 7	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
1915	3 6	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
Average	3.6	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
Total crop—																								
1912	95 0	182	0 8	2	0 10	2	3 7	9	8 8	20	9 11	21	27 11	54	3 14	7	20 13	35	14 3	21	0 0	0	.78	6
1913	132 0	540	72 1	323	28 9	92	14 1	40	11 4	29	1 12	4	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.33	3
1914	119 6	348	30 1	106	32 14	94	31 2	80	17 10	42	5 12	12	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.22	21
1915	148 6	436	11 6	48	31 8	103	37 15	109	44 2	113	16 11	29	3 6	7	0 0	0	0 0	0	0 0	0	0 0	0	4.44	41
Average	**123.7**	**377**	**28.5**	**120**	**23.4**	**73**	**21.6**	**60**	**20.4**	**51**	**8.5**	**17**	**8.0**	**16**	**1.0**	**2**	**5.2**	**9**	**3.5**	**5**	**0**	**0**	**2.69**	**18**
50, tree No. 23-88-8, Valencia strain:																								
Orchard grade—																								
1912	64 10	139	0 4	1	3 2	9	6 3	15	16 0	38	12 8	27	17 8	34	4 5	7	4 2	7	0 10	1	0 0	0	0	....
1913	82 2	276	28 10	118	28 5	91	13 5	37	10 15	28	0 7	1	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
1914	91 2	274	38 2	124	38 3	97	18 3	45	3 10	8	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	123 1	367	12 0	44	26 14	88	35 14	107	43 11	117	3 12	9	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	5.33	....
Average	91.0	264	19.8	72	24.1	71	18.4	51	18.6	48	5.7	9	4.7	9	1.1	2	1.3	2	0.1	0.3	0	0	3.67	....

| | | |

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
51, tree No. 23-77-17, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	94 12	180	1 11	6	2 11	8	3 0	8	7 5	17	10 2	21	24 13	46	6 8	11	20 4	32	8 14	13	0 0	0	1.00	1
1913	110 4	422	41 4	182	24 12	82	17 11	51	19 12	49	2 11	6	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	4.22	0
1914	128 14	388	58 15	201	36 10	101	21 6	53	10 4	22	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	4
1915	157 13	414	5 0	18	19 9	62	31 15	90	64 6	161	25 9	57	9 12	20	1 2	2	0 0	0	0 0	0	0 0	0	4.22	10
Average	**122.9**	**351**	**26.7**	**102**	**20.9**	**63**	**19.0**	**51**	**24.4**	**62**	**9.6**	**21**	**8.8**	**17**	**1.9**	**3**	**5.1**	**8**	**2.2**	**3**	**0**	**0**	**3.44**	**4**
52, tree No. 23-89-8, Valencia strain:																								
Orchard grade—																								
1912	42 11	83	0 0	0	0 0	0	0 12	2	4 7	11	12 10	27	9 11	19	2 4	4	7 8	12	5 7	8	0 0	0	2.33	....
1913	97 8	343	43 9	184	31 2	100	8 8	24	11 7	29	2 4	5	0 0	0	0 0	0	0 10	1	0 0	0	0 0	0	3.33	....
1914	95 3	276	43 0	143	26 9	74	13 2	32	10 8	23	2 0	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	68 8	172	0 4	1	5 15	19	8 4	24	28 2	72	17 0	38	5 8	12	2 14	5	0 9	1	0 0	0	0 0	0	5.00	....
Average	76.0	219	21.7	82	15.9	48	7.7	21	13.6	34	8.5	19	3.8	8	1.3	2	2.2	4	1.4	2	0	0	3.50	....
Standard grade—																								
1912	61 4	130	0 10	2	3 14	11	4 7	12	13 2	31	11 10	24	16 6	31	1 11	3	9 8	16	0 0	0	0 0	0	2.67	....
1913	36 5	160	28 10	137	3 10	10	4 11	13	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1914	12 0	41	6 7	26	3 3	9	1 2	3	1 4	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	45 6	128	0 9	4	7 12	27	14 2	41	13 9	35	7 12	18	1 0	2	0 0	0	0 10	1	0 0	0	0 0	0	3.67	....
Average	38.7	115	9.1	42	4.6	14	6.1	17	7.0	17	4.8	11	4.3	8	0.4	1	2.5	4	0	0	0	0	3.00	....
Cull fruits—																								
1912	22 5	47	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	1.33	....
1913	5 6	75	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	3.33	....
1914	2 12	17	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	2.00	....
1915	1 0	4	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	2.67	....
Average	7.9	36	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	2.33	....

Total crop—																														
1912	126	4	260	0 10	2	3 14	11	5 3	14	17 9	42	24 4	51	26 1	50	3 15	7	17 0	28	5 7	8	0 0	0	2.22	5					
1913	139	3	578	72 3	321	34 2	110	13 3	37	11 7	29	2 4	5	0 0	0	0 0	0	0 10	1	0 0	0	0 0	0	3.33	5					
1914	109	15	334	49 7	169	29 12	83	14 4	35	11 12	26	2 0	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	43					
1915	114	14	304	0 13	5	13 11	46	22 6	65	41 11	107	24 12	56	6 8	14	2 14	5	1 3	2	0 0	0	0 0	0	3.78	40					
Average	122.6		369	30.8	124	20.4	63	13.8	38	20.1	51	13.3	29	8.1	16	1.7	3	4.7	8	1.4	2	0	0	3.00	23					
53, tree No. 23-98-6, Valencia strain:																														
Orchard grade—																														
1912	76	8	164	0 12	3	3 3	10	3 8	10	13 3	32	15 6	34	25 8	50	5 10	10	4 2	7	5 4	8	0 0	0	.67	....					
1913	78	13	256	26 0	108	22 2	70	14 8	40	11 15	29	3 1	7	1 3	2	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....					
1914	87	3	286	57 0	202	19 14	58	8 9	22	1 12	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.00	....					
1915	75	7	205	4 11	17	11 12	37	13 0	37	33 0	85	9 15	23	2 8	5	0 9	1	0 0	0	0 0	0	0 0	0	4.00	....					
Average	79.5		228	22.1	83	14.2	44	9.9	27	15.0	38	7.1	16	7.3	14	1.5	3	1.0	2	1.3	2	0	0	3.78	....					
Standard grade—																														
1912	67	11	152	3 4	12	4 10	14	5 14	16	10 9	26	15 0	32	16 2	31	1 11	3	10 9	18	0 0	0	0 0	0	1.00	....					
1913	18	13	90	16 3	82	1 3	4	1 0	3	0 0	0	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....					
1914	22	4	85	15 8	65	4 7	14	0 11	2	1 10	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....					
1915	37	2	123	7 15	33	15 3	51	9 2	27	2 4	6	2 10	6	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....					
Average	36.5		113	10.7	48	6.4	21	4.2	12	3.6	9	4.5	10	4.0	8	0.4	1	2.6	5	0	0	0	0	3.08	....					
Cull fruits—																														
1912	16	4	36																					1.00	....					
1913	3	0	44																					5.33	....					
1914	1	13	15																					2.67	....					
1915	2	2	10																					5.00	....					
Average	5.8		26																					3.50	....					
Total crop—																														
1912	160	7	352	4 0	15	7 13	24	9 6	26	23 12	58	30 6	66	41 10	81	7 5	13	14 11	25	5 4	8	0 0	0	.89	8					
1913	100	10	390	42 3	190	23 5	74	15 8	43	11 15	29	3 8	8	1 3	2	0 0	0	0 0	0	0 0	0	0 0	0	4.67	4					
1914	111	4	386	72 8	267	24 5	72	9 4	24	3 6	8	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.22	40					
1915	114	11	338	12 10	50	26 15	88	22 2	64	35 4	91	12 9	29	2 8	5	0 9	1	0 0	0	0 0	0	0 0	0	4.00	13					
Average	121.8		367	32.8	131	20.6	65	14.1	39	18.6	47	11.6	26	11.3	22	3.0	4	3.7	6	1.3	2	0	0	3.45	16					
54, tree No. 23-86-8, Valencia strain:																														
Orchard grade—																														
1912	40	10	76	0 4	1	0 11	2	1 7	4	2 14	7	5 15	12	10 12	21	2 6	4	9 4	15	7 1	10	0 0	0	.67	....					
1913	82	7	283	32 4	133	23 10	78	11 4	32	13 9	36	1 12	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.67	....					
1914	58	10	134	4 14	14	11 6	30	13 2	31	18 0	38	10 2	19	0 8	1	0 0	0	0 10	1	0 0	0	0 0	0	2.00	....					
1915	165	5	553	29 4	122	46 2	164	46 5	146	40 12	114	2 14	7	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....					
Average	86.8		262	16.7	68	20.2	69	18.0	53	18.8	49	5.2	11	2.8	6	0.6	1	2.5	4	1.8	3	0	0	2.25	....					

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
54, tree No. 23-86-8, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	29 5	56	0 4	1	1 1	3	0 14	2	4 7	10	6 7	13	5 11	10	1 12	3	8 13	14	0 0	0	0 0	0	0.67	....
1913	28 2	117	20 9	94	3 11	13	2 9	7	0 6	1	0 7	1	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1914	9 14	26	2 10	9	1 6	4	1 8	4	1 12	4	0 8	1	2 2	4	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	47 10	189	35 8	150	9 12	32	2 0	6	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
Average	28.7	97	14.7	64	4.0	13	1.7	5	1.6	4	1.8	4	2.1	4	0.4	1	2.2	4	0	0	0	0	2.59	....
Cull fruits—																								
1912	9 1	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	7 14	79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
1914	0 6	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
1915	2 7	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.00	....
Average	4.9	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.58	....
Total crop—																								
1912	79 0	148	0 8	2	1 12	5	2 5	6	7 5	17	12 6	25	16 7	31	4 2	7	18 1	29	7 1	10	0 0	0	.44	0
1913	118 7	479	52 13	227	27 5	91	13 13	39	13 15	37	2 3	5	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.00	1
1914	68 14	162	7 8	23	12 12	34	14 10	35	19 12	42	10 10	20	2 10	5	0 0	0	0 10	1	0 0	0	0 0	0	3.00	9
1915	215 6	755	64 12	272	55 14	196	48 5	152	41 2	115	2 14	7	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.44	15
Average	**120.4**	**386**	**31.4**	**131**	**24.4**	**82**	**19.8**	**58**	**20.5**	**53**	**7.0**	**14**	**4.9**	**9**	**1.0**	**2**	**4.7**	**8**	**1.8**	**3**	**0**	**0**	**2.47**	**6**
55, tree No. 23-87-4, Valencia strain:																								
Orchard grade—																								
1912	69 7	156	1 10	6	4 4	13	6 10	18	16 2	38	7 0	37	16 8	32	1 11	3	4 14	8	0 12	1	0 0	0	2.00	....
1913	56 2	180	17 8	73	12 13	41	9 0	25	12 4	31	3 2	7	1 7	3	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1914	106 7	307	39 8	130	37 5	104	22 14	58	5 14	13	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	111 5	306	5 11	21	16 6	52	27 9	80	45 4	116	12 11	29	3 12	8	0 0	0	0 0	0	0 0	0	0 0	0	5.67	....
Average	85.8	237	16.1	58	17.7	53	16.5	45	19.9	50	5.9	19	5.4	11	0.4	1	1.2	2	0.2	0.3	0	0	3.33	....

Standard grade—																																
1912	36	11	80	1	7	5	1	12	5	5	5	14	9	1	21	7	15	16	5	10	10	0	9	1	5	0	8	0	0	0	0	0	1.67	....
1913	17	10	79	14	5	68	3	0	10	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.33	....
1914	29	5	98	14	1	55	8	10	26	4	6	12	1	4	3	0	8	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1915	31	5	99	5	5	21	13	10	44	8	7	24	3	0	8	0	7	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	6.33	....
Average	28.	7	89	8.	8	37	6.	8	21	4.	6	13	3.	3	8	2.	2	5	1.	7	3	0.	1	0.	3	1.	3	2	0	0	0	0	3.42	....
Cull fruits—																																
1912	11	0	22																													3.00	....
1913	3	9	41																													1.67	....
1914	3	6	18																													3.67	....
1915	4	8	16																													4.33	....
Average	5.	6	24																													3.17	....
Total crop—																																
1912	117	2	258	3	1	11	6	0	18	11	15	32	25	3	59	24	15	53	22	2	42	2	4	4	9	14	16	0	12	1	0	0	2.22	6
1913	77	5	300	31	13	141	15	13	51	9	5	26	12	4	31	3	2	7	1	7	3	0	0	0	0	0	0	0	0	0	0	0	1.33	2
1914	139	2	423	53	9	185	45	15	130	27	4	70	7	2	16	1	6	3	0	8	1	0	0	0	0	0	0	0	0	0	0	0	4.22	28
1915	147	2	421	11	0	42	30	0	96	36	0	104	48	4	124	13	2	30	4	4	9	0	0	0	0	0	0	0	0	0	0	0	5.44	35
Average	120.	2	351	24.	9	95	24.	4	74	21.	1	58	23.	2	59	10.	6	23	7.	1	13	0.	6	1	2.	5	4	0.	2	0.	3	0	0	3.30	18
56, tree No. 23-86-9, Valencia strain:																																
Orchard grade—																																
1912	76	10	167	0	9	2	2	4	7	7	0	19	23	3	55	13	7	28	22	7	43	2	2	4	2	14	5	2	12	4	0	0	.67	....
1913	76	4	257	31	6	127	23	1	73	9	10	27	10	6	26	1	13	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1914	101	3	271	32	14	104	27	11	74	23	6	56	15	6	33	1	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1915	133	14	380	5	12	23	16	2	54	38	3	114	53	0	142	16	2	37	4	11	10	0	0	0	0	0	0	0	0	0	0	0	4.00	....
Average	97.	0	269	17.	6	64	17.	3	52	19.	5	54	25.	5	64	8.	3	18	6.	8	13	0.	5	1	0.	7	1	0.	7	1	0	0	2.75	....
Standard grade—																																
1912	33	0	73	1	5	5	1	6	4	3	13	10	10	12	24	6	3	13	5	13	11	0	0	0	3	12	6	0	0	0	0	0	3.00	....
1913	23	6	102	21	0	95	1	8	5	0	6	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1914	7	2	23	3	2	13	0	15	3	0	12	2	1	5	3	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1915	16	12	58	7	12	30	6	4	20	2	6	7	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
Average	20.	1	64	8.	3	36	2.	5	8	1.	8	#	5	3.	2	7	1.	8	4	1.	5	3	0	0	0.	9	2	0	0	0	0	0	3.83	....
Cull fruits—																																
1912	1	12	24																													1.00	....
1913	3	6	45																													2.00	....
1914	1	8	9																													3.33	....
1915	2	1	11																													5.33	....
Average	2.	2	22																													2.92	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
56, tree No. 23-86-9, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	111 6	264	1 14	7	3 10	11	10 13	29	33 15	79	19 10	41	28 4	54	2 2	4	6 10	11	2 12	4	0 0	0	1.56	4
1913	103 0	404	52 6	222	24 9	78	10 0	28	10 14	27	1 13	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	2
1914	109 13	303	36 0	117	28 10	77	24 2	58	16 11	36	2 14	6	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.56	12
1915	152 11	449	13 8	53	22 6	74	40 9	121	53 6	143	16 2	37	4 11	10	0 0	0	0 0	0	0 0	0	0 0	0	4.89	12
Average	**119.3**	**355**	**25.9**	**100**	**19.8**	**60**	**21.4**	**59**	**28.7**	**71**	**10.1**	**22**	**8.2**	**16**	**0.5**	**1**	**1.7**	**3**	**0.7**	**1**	**0**	**0**	3.17	8
57, tree No. 23-89-9, Valencia strain:																								
Orchard grade—																								
1912	49 3	94	0 4	1	0 5	1	0 12	2	5 10	13	7 8	16	16 8	32	1 10	3	8 13	15	7 13	11	0 0	0	1.67	....
1913	88 8	307	39 9	166	23 8	74	15 15	44	7 12	19	1 12	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	96 0	280	29 1	92	31 11	85	17 10	66	14 0	30	3 10	7	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	88 10	260	3 3	12	10 10	34	12 0	63	42 0	106	14 9	3	3 11	8	1 14	3	0 11	1	0 0	0	0 0	0	1.33	....
Average	80.6	235	18.0	68	16.5	49	11.6	44	17.3	42	6.9	8	5.1	10	0.9	2	2.4	4	2.0	3	0	0	2.08	....
Standard grade—																								
1912	34 12	68	0 4	1	0 10	2	2 10	7	5 11	13	4 12	10	10 5	19	0 0	0	10 8	16	0 0	0	0 0	0	0	....
1913	24 0	108	19 4	93	3 6	11	1 6	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1914	16 12	54	7 6	29	5 8	16	0 12	2	2 10	6	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	53 6	161	5 10	24	15 15	53	15 15	46	8 12	22	7 2	16	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
Average	32.2	98	8.1	37	6.4	21	5.2	15	4.3	10	3.1	7	2.6	5	0	0	2.6	4	0	0	0	0	2.42	....
Cull fruits—																								
1912	13 14	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.33	....
1913	7 0	116	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1914	2 4	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
1915	1 10	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
Average	6.2	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.17	....

Total crop:																										
1912	97 13	187	0 8	2	0 15	3	3 6	9	11 5	26	12 4	26	26 13	51	1 10	3	19 5	31	7 13	11	0 0	0	.67	3
1913	119 8	531	58 13	259	26 14	85	17 5	48	7 12	19	1 12	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	1
1914	115 0	345	36 7	121	37 3	101	18 6	68	16 10	36	4 2	8	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.56	11
1915	143 10	427	8 13	36	26 9	87	27 15	109	50 12	128	21 11	49	3 11	8	1 14	3	0 11	1	0 0	0	0 0	0	3.00	21
Average	**119.0**	**373**	**26.1**	**105**	**22.9**	**69**	**16.8**	**59**	**21.6**	**52**	**10.0**	**22**	**7.6**	**15**	**0.9**	**2**	**5.0**	**8**	**2.0**	**3**	**0**	**0**	2.23	**9**
58, tree No. 23-88-4, Valencia strain:																								
Orchard grade—																								
1912	75 3	168	1 4	5	4 14	15	6 9	20	15 12	39	12 8	27	21 7	41	1 10	3	9 1	15	2 2	3	0 0	0	1.00	....
1913	62 8	199	21 15	86	18 14	59	6 12	19	10 9	26	2 13	6	1 9	3	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1914	116 11	334	39 2	131	36 15	104	30 6	76	9 4	21	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	86 13	237	2 11	13	8 6	27	20 12	60	36 12	95	13 4	31	5 0	11	0 0	0	0 0	0	0 0	0	0 0	0	6.67	....
Average	85.3	235	16.3	59	17.3	51	16.1	44	18.1	45	7.4	17	7.0	14	0.4	1	2.3	4	0.5	1	0	0	3.50	....
Standard grade—																								
1912	36 13	78	1 12	6	2 12	8	2 3	6	3 7	8	6 0	12	14 11	28	1 2	2	4 14	8	0 0	0	0 0	0	.33	....
1913	22 12	100	18 10	88	2 8	8	1 2	3	0 0	0	0 0	0	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1914	15 2	48	6 2	24	3 0	9	3 0	8	2 0	5	0 8	1	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	37 9	115	3 6	15	11 6	37	13 12	40	6 13	18	1 12	4	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
Average	28.1	85	7.5	33	4.9	16	5.0	14	3.1	8	2.1	4	4.1	8	0.3	0.5	1.2	2	0	0	0	0	3.08	....
Cull fruits—																								
1912	10 0	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	7 9	67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	....
1914	3 0	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1915	0 15	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
Average	5.4	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
Total crop—																								
1912	122 0	270	3 0	11	7 10	23	8 12	26	19 3	47	18 8	39	36 2	69	2 12	5	13 15	23	2 2	3	0 0	0	1.00	9
1913	92 13	366	40 9	174	21 6	67	7 14	22	10 9	26	2 13	6	2 1	4	0 0	0	0 0	0	0 0	0	0 0	0	2.56	0
1914	134 13	393	45 4	155	39 15	113	33 6	84	11 4	26	1 8	3	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.00	44
1915	125 5	359	6 1	28	19 12	64	34 8	100	43 9	113	15 0	35	5 8	12	0 0	0	0 0	0	0 0	0	0 0	0	4.78	20
Average	**118.7**	**347**	**23.7**	**92**	**22.2**	**67**	**21.1**	**58**	**21.1**	**53**	**9.5**	**21**	**11.1**	**22**	**0.7**	**1**	**3.5**	**6**	**0.5**	**1**	**0**	**0**	2.84	**18**
59, tree No. 23-88-9, Valencia strain:																								
Orchard grade—																								
1912	78 7	180	1 2	4	8 1	25	6 6	17	18 5	47	14 8	31	21 12	42	1 10	3	4 12	8	1 15	3	0 0	0	2.67	....
1913	85 15	306	42 6	176	27 4	87	9 9	27	4 14	12	1 14	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1914	86 6	235	21 14	72	34 11	94	19 12	48	7 7	16	2 10	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1915	97 13	260	4 10	17	10 12	34	19 0	55	42 8	109	10 3	23	8 1	17	2 11	5	0 0	0	0 0	0	0 0	0	5.00	....
Average	87.1	245	17.5	67	20.2	60	13.7	37	18.3	46	7.3	16	7.5	15	1.1	2	1.2	2	0.5	1	0	0	3.17	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
59, tree No. 23-88-9, Valencia strain—Continued—																								
Standard grade—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	35 5	79	1 14	7	2 6	7	2 4	6	5 2	12	5 0	11	15 3	29	1 2	3	2 6	4	0 0	0	0 0	0	0.67	....
1913	24 2	121	20 6	109	1 11	6	1 9	5	0 0	0	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.33	....
1914	22 8	67	9 0	33	5 8	16	3 8	9	2 4	5	0 8	1	1 2	2	0 0	0	0 10	1	0 0	0	0 0	0	6.00	....
1915	29 8	90	4 9	17	12 6	40	5 9	16	6 1	15	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	7.00	....
Average	27.9	89	9.0	42	5.5	17	3.2	9	3.4	8	1.7	4	4.1	8	0.3	1	0.8	1	0	0	0	0	5.00	....
Cull fruits—																								
1912	8 14	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	3 11	57	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.33	....
1914	1 7	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
1915	0 12	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.33	....
Average	3.7	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.17	....
Total crop—																								
1912	122 10	282	3 0	11	10 7	32	8 10	23	23 7	59	19 8	42	36 15	71	2 12	6	7 2	12	1 15	3	0 0	0	1.11	13
1913	113 12	484	62 12	285	28 15	93	11 2	32	4 14	12	2 6	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	9
1914	110 5	310	30 14	105	40 3	110	23 4	57	9 11	21	3 2	6	1 2	2	0 0	0	0 10	1	0 0	0	0 0	0	4.22	43
1915	128 1	356	9 3	34	23 2	74	24 9	71	48 9	124	11 2	25	8 1	17	2 11	5	0 0	0	0 0	0	0 0	0	5.44	11
Average	**118.7**	**358**	**26.5**	**109**	**27.7**	**77**	**16.9**	**46**	**21.6**	**54**	**9.0**	**20**	**11.5**	**23**	**1.4**	**3**	**1.9**	**3**	**0.5**	**1**	**0**	**0**	**3.78**	**19**
60, tree No. 23-92-2, Valencia strain:																								
Orchard grade—																								
1912	37 6	76	0 4	1	0 10	2	2 10	7	5 6	13	5 6	12	8 11	17	3 5	6	6 8	11	4 10	7	0 0	0	2.33	....
1913	58 6	200	22 6	94	15 12	51	11 1	32	6 10	17	2 1	5	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
1914	104 4	333	55 0	198	50 4	87	14 0	36	4 0	10	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1915	73 1	214	6 10	24	15 12	51	17 10	53	27 0	72	5 3	12	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	6.00	....
Average	68.3	206	21.1	79	20.6	48	11.3	32	10.8	28	3.4	8	2.5	5	0.8	2	1.6	3	1.2	2	0	0	4.42	....

Standard grade—																														
1912	52	15	108	1	2	4	1	8	4	1	10	4	8	13	21	9	1	19	16	5	31	4	15	9	9	9	16	0	0	0	0	0	0	0.33	....
1913	21	12	101	18	8	91	1	12	6	1	1	3	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1914	32	12	129	25	1	106	5	0	16	2	4	6	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	45	7	151	10	6	42	19	4	65	8	3	24	6	6	17	1	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
Average	38.	2	122	13.	8	61	6.	9	23	3.	3	9	4.	0	10	2.	6	6	4.	1	8	1.	2	2	2.	4	4	0		0		0	0	2.42	....
Cull fruits—																																			
1912	27	1	49																															1.00	....
1913	3	6	49																															2.33	....
1914	1	6	12																															2.33	....
1915	15	4	16																															3.67	....
Average	11.	8	32																															2.33	....
Total crop—																																			
1912	117	6	233	1	6	5	2	2	6	4	4	11	14	3	34	14	7	31	25	0	48	8	4	15	16	1	27	4	10	7	0	0	0	1.22	21
1913	83	8	350	40	14	185	17	8	57	12	2	35	7	1	18	2	1	5	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.56	2
1914	138	6	474	80	1	304	85	4	103	16	4	42	4	7	11	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.44	38
1915	133	12	381	17	0	66	35	0	116	25	13	77	33	6	89	6	7	15	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	4.44	43
Average	118.	3	360	34.	8	140	35.	0	71	14.	6	41	14.	8	38	6.	0	13	6.	6	13	2.	1	4	4.	0	7	1.	2	2	0	0	3.17	26
61, tree No. 23-77-20, Valencia strain:																																			
Orchard grade—																																			
1912	55	11	109	0	0	0	0	5	1	1	8	4	4	14	13	8	8	19	17	0	33	2	10	5	14	5	24	6	9	10	0	0	0	1.33	....
1913	83	10	295	30	15	129	29	11	101	10	11	32	10	4	28	1	10	4	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1914	78	8	231	33	11	117	18	12	53	16	13	41	6	12	15	2	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	61	12	178	4	7	16	13	0	42	16	10	49	23	0	61	2	10	6	1	8	3	0	9	1	0	0	0	0	0	0	0	0	0	5.00	....
Average	69.	9	203	17.	3	66	15.	4	49	11.	4	32	11.	2	29	3.	8	9	4.	7	9	0.	8	2	3.	6	6	1.	6	3		0	0	4.08	....
Standard grade—																																			
1912	31	15	71	0	4	1	1	4	4	3	4	9	6	11	17	6	8	14	8	11	17	0	8	1	4	13	8	0	0	0	0	0	0	1.00	....
1913	22	6	100	18	11	87	2	12	10	0	10	2	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1914	73	0	100	55	14	55	5	10	17	5	2	14	3	12	9	0	8	1	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	45	13	143	5	12	24	15	10	53	12	14	38	8	7	21	2	2	5	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
Average	43.	3	104	20.	1	42	6.	3	21	5.	5	16	4.	8	12	2.	3	5	3.	0	6	0.	1	0.	3	1.	2	2		0		0	0	3.59	....
Cull fruits—																																			
1912	8	10	16																															0	....
1913	4	0	51																															3.33	....
1914	2	4	10																															2.33	....
1915	3	8	22																															4.67	....
Average	4.	6	25																															2.58	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
61, tree No. 23–77–20, Valencia strain—Continued.																								
Total crop—	*Lbs.oz.*		*Lbs oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	96 4	196	0 4	1	1 9	5	4 12	13	11 9	30	15 0	33	25 11	50	3 2	6	19 2	32	6 9	10	0 0	0	0.78	0
1913	110 0	446	49 10	216	32 7	111	11 5	34	10 9	29	1 10	4	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	4.44	3
1914	153 12	341	89 9	172	24 6	70	21 15	55	10 8	24	3 0	6	2 2	4	0 0	0	0 0	0	0 0	0	0 0	0	3.89	33
1915	111 1	343	10 5	40	28 10	95	29 8	87	31 7	82	4 12	11	2 8	5	0 9	1	0 0	0	0 0	0	0 0	0	4.56	20
Average	**117.8**	**332**	**37.4**	**107**	**21.8**	**70**	**16.9**	**47**	**16.0**	**41**	**6.1**	**14**	**7.7**	**15**	**0.9**	**2**	**4.8**	**8**	**1.6**	**3**	**0**	**0**	3.42	14
62, tree No. 23–89–10, Valencia strain:																								
Orchard grade—																								
1912	32 12	69	0 4	1	1 6	4	2 4	6	6 12	17	4 11	10	7 1	14	3 6	6	3 0	5	4 0	6	0 0	0	.67	....
1913	100 7	319	27 0	109	36 7	114	17 10	49	14 4	36	4 2	9	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1914	93 2	249	23 2	73	32 4	88	22 10	55	15 2	33	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1915	78 14	196	0 0	0	2 5	7	11 4	32	36 12	94	17 9	40	8 14	19	2 2	4	0 0	0	0 0	0	0 0	0	8.00	....
Average	76.3	208	12.6	46	18.1	53	13.4	36	18.2	45	6.6	15	4.2	9	1.4	3	0.8	1	1.0	2	0	0	3.84	....
Standard grade—																								
1912	68 6	148	4 0	14	2 1	6	5 14	16	12 13	30	14 14	31	12 11	24	2 10	5	13 7	22	0 0	0	0 0	0	.67	....
1913	28 10	124	21 12	102	6 3	20	0 5	1	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.33	....
1914	12 9	38	4 8	18	2 6	7	2 0	5	2 2	5	1 0	2	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	6.67	....
1915	33 0	93	1 4	6	7 4	23	9 9	27	10 10	27	3 6	8	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
Average	35.6	101	7.9	35	4.5	14	4.1	12	6.5	16	4.8	10	3.5	7	0.7	1	3.4	6	0	0	0	0	4.17	....
Cull fruits—																								
1912	8 8	17	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.00	....
1913	5 0	80	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.67	....
1914	1 4	10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.00	....
1915	1 0	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5.00	....
Average	3.9	28	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.17	....

Total crop—																													
1912	109	10	234	4	4	15	3	7	10	8	2	22	19	9	47	19	9	41	19	12	38	6	0	11	16	7	27	4	0	6	0	0	0	1.11	0
1913	134	1	523	48	12	211	42	10	134	17	15	50	14	10	37	4	2	9	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3.89	2
1914	106	15	297	27	10	91	34	10	95	24	10	60	17	4	38	1	0	2	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	4.22	3
1915	112	14	295	1	4	6	9	9	30	20	13	59	47	6	121	20	15	48	9	13	21	2	2	4	0	0	0	0	0	0	0	0	0	5.67	3
Average	**115.9**		**337**	**20.5**		**81**	**22.6**		**67**	**17.9**		**48**	**24.7**		**61**	**11.4**		**25**	**7.8**		**16**	**2.0**		**4**	**4.1**		**7**	**1.0**		**2**	**0**		**0**	**3.72**	**2**
63, tree No. 23-76-20, Sporting strain:																																			
Orchard grade—																																			
1912	49	4	95	0	0	0	1	6	4	1	14	5	5	0	12	7	14	17	15	5	29	2	6	4	10	7	17	5	0	7	0	0	0	.67	....
1913	92	12	298	26	6	104	28	1	91	18	13	54	15	8	40	3	7	8	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1914	90	12	254	30	3	99	29	7	81	21	1	52	8	8	19	1	0	2	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	92	9	247	5	5	19	13	15	43	18	14	54	37	10	94	13	5	30	2	15	6	0	9	1	0	0	0	0	0	0	0	0	0	5.67	....
Average	81.3		224	15.5		56	18.2		55	15.2		41	16.7		41	6.4		14	4.8		9	0.7		1	2.6		4	1.3		2	0		0	3.42	....
Standard grade—																																			
1912	26	3	52	0	15	3	0	0	0	2	0	5	2	2	5	4	7	9	10	11	20	2	4	4	3	12	6	0	0	0	0	0	0	.67	....
1913	22	6	98	16	5	80	3	2	10	1	6	4	1	3	3	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1914	32	12	106	13	15	53	11	8	34	4	6	12	2	7	6	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	35	10	117	6	8	31	12	5	41	9	3	27	4	11	12	2	5	5	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	4.33	....
Average	29.2		93	9.4		42	6.7		21	4.2		12	2.6		7	1.9		4	2.7		5	0.7		1	0.9		2	0		0	0		0	2.59	....
Cull fruits—																																			
1912	12	9	24	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.33	....
1913	3	15	36	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	2.00	....
1914	1	0	7	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	2.33	....
1915	3	8	16	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	4.67	....
Average	5.3		21	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	2.58	....
Total crop—																																			
1912	88	0	171	0	15	3	1	6	4	3	14	10	7	2	17	12	5	26	26	0	49	4	10	8	14	3	23	5	0	7	0	0	0	.89	0
1913	119	1	432	42	11	184	31	3	101	20	3	58	26	11	43	3	13	9	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	3.11	5
1914	124	8	367	44	2	152	40	15	115	25	7	64	10	15	25	1	8	3	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	3.22	16
1915	131	11	380	11	13	50	26	4	84	28	1	81	42	5	106	15	10	35	2	15	6	1	3	2	0	0	0	0	0	0	0	0	0	4.89	27
Average	**115.8**		**338**	**24.6**		**97**	**24.9**		**76**	**19.4**		**53**	**21.8**		**48**	**8.3**		**18**	**7.5**		**14**	**1.5**		**2**	**3.5**		**6**	**1.3**		**2**	**0**		**0**	**3.03**	**12**
64, tree No. 23-93-6, Valencia strain:																																			
Orchard grade—																																			
1912	61	15	121	0	0	0	2	7	7	2	4	6	5	0	12	9	7	20	23	11	46	4	2	7	10	0	16	5	0	7	0	0	0	1.67	....
1913	77	7	254	26	6	107	24	14	80	11	15	33	10	6	26	3	5	7	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1914	97	7	290	48	2	160	32	1	88	12	14	32	3	14	9	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	97	15	306	20	11	78	28	13	94	24	2	70	21	8	57	2	6	6	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
Average	83.7		243	23.8		86	22.1		67	12.8		35	10.2		26	3.9		9	6.2		12	1.0		2	2.5		4	1.3		2	0		0	3.42	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
64, tree No. 23-93-6, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	38 15	78	0 0	0	2 2	6	3 8	9	4 11	11	6 0	12	16 8	30	1 4	2	4 14	8	0 0	0	0 0	0	0.33	....
1913	19 8	92	15 15	81	2 7	8	1 2	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1914	16 5	59	13 12	52	1 6	4	1 3	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	36 5	131	12 12	55	16 4	55	5 8	16	1 6	4	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
Average	27.8	90	10.6	47	5.5	18	2.8	8	1.5	4	1.6	3	4.1	8	0.3	0.5	1.2	2	0	0	0	0	2.92	....
Cull fruits—																								
1912	6 4	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	....
1913	4 2	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.67	....
1914	2 0	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1915	5 0	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.00	....
Average	4.3	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.42	....
Total crop—																								
1912	107 2	212	0 0	0	4 9	13	5 12	15	9 11	23	15 7	32	40 3	76	5 6	9	14 14	24	5 0	7	0 0	0	1.00	0
1913	101 2	416	42 5	188	27 5	88	13 1	36	10 6	26	3 5	7	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	4.22	1
1914	115 12	367	61 14	212	33 7	92	14 1	35	3 14	9	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	2
1915	139 4	468	33 7	133	45 1	149	29 10	86	22 14	61	2 13	7	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	4.44	3
Average	**115.8**	**366**	**34.4**	**133**	**27.6**	**86**	**15.6**	**43**	**11.7**	**30**	**5.5**	**12**	**10.3**	**20**	**1.3**	**2**	**3.7**	**6**	**1.3**	**2**	**0**	**0**	**3.25**	**2**
65, tree No. 23-87-10, Coarse strain:																								
Orchard grade—																								
1912	59 14	127	0 8	2	1 10	5	2 7	7	8 12	22	14 5	32	16 10	33	2 12	5	8 12	15	4 2	6	0 0	0	.67	....
1913	106 10	385	39 8	168	31 0	119	16 14	49	15 6	40	3 14	9	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1914	75 5	185	6 10	21	15 8	42	21 15	54	24 10	55	6 1	12	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	1.00	....
1915	68 1	166	0 4	1	1 4	4	6 11	19	31 1	79	15 5	35	9 14	21	3 10	7	0 0	0	0 0	0	0 0	0	4.00	....
Average	77.5	216	11.7	48	12.3	43	12.0	32	20.0	49	9.9	22	6.5	14	1.6	3	2.2	4	1.0	2	0	0	2.59	....

Standard grade—																																
1912	37	3	75	0	0	0	0	6	1	2	10	7	8	12	20	7	6	14	9	7	18	0	8	1	8	2	14	0	0	0	0	0	0	....
1913	27	11	128	23	0	114	2	12	9	1	1	3	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1914	27	3	71	4	8	16	5	8	16	4	4	11	7	0	16	2	6	5	3	1	6	0	8	1	0	0	0	0	0	0	0	0	4.67	....
1915	39	7	97	0	3	1	4	3	13	8	14	25	6	5	16	13	10	30	4	8	9	1	12	3	0	0	0	0	0	0	0	0	4.33	....
Average	32.9		93	6.9		33	3.2		10	4.2		12	5.7		14	5.8		12	4.3		8	0.7		1	2.0		4	0		0	0		3.08	....
Cull fruits—																																		
1912	15	0	29																														2.00	....
1913	2	8	37																														2.33	....
1914	0	12	4																														4.00	....
1915	2	0	7																														4.67	....
Average	5.1		19																														2.25	....
Total crop—																																		
1912	112	1	231	0	8	2	2	0	6	5	1	14	17	8	42	21	11	46	26	1	51	3	4	6	16	14	29	4	2	6	0	0	.89	16
1913	136	13	550	62	8	282	33	12	128	17	15	52	16	4	42	3	14	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.44	3
1914	103	4	260	11	2	37	21	0	58	26	3	65	31	10	71	8	7	17	3	10	7	0	8	1	0	0	0	0	0	0	0	0	3.22	54
1915	109	8	270	0	7	2	5	7	17	15	9	44	37	6	95	28	15	65	14	6	30	5	6	10	0	0	0	0	0	0	0	0	4.33	32
Average	**115.4**		**328**	**18.6**		**81**	**15.5**		**52**	**16.2**		**44**	**25.7**		**63**	**15.7**		**34**	**11.0**		**22**	**2.3**		**4**	**4.2**		**7**	**1.0**		**2**	**0**		**0**	**2.97**	**26**
66, tree No. 23-76-21, Valencia strain:																																		
Orchard grade—																																		
1912	65	5	123	0	4	1	0	6	1	1	13	5	8	0	19	9	13	21	19	10	36	1	12	3	16	2	26	7	9	11	0	0	0	....
1913	100	1	356	43	2	178	38	3	126	10	0	29	7	9	20	0	7	1	0	12	2	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1914	100	13	264	18	8	62	28	6	77	30	7	74	18	2	40	5	6	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1915	85	13	241	9	7	34	17	14	56	17	0	49	29	3	75	8	15	20	3	6	7	0	0	0	0	0	0	0	0	0	0	0	4.00	....
Average	88.0		246	17.8		69	21.2		65	14.8		39	15.7		39	6.1		13	5.9		11	0.4		1	4.0		7	1.9		3	0		0	2.50	....
Standard grade—																																		
1912	6	14	13	0	0	0	0	0	0	0	0	0	3	1	7	1	6	3	1	11	2	0	0	0	0	12	1	0	0	0	0	0	1.33	....
1913	17	1	74	13	3	62	1	14	6	1	5	4	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1914	28	6	89	10	8	37	8	14	27	4	1	13	3	15	10	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1915	40	3	129	6	14	29	15	14	53	10	2	29	4	11	12	2	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
Average	23.1		76	7	6	32	6.7		22	3.9		12	3.1		8	1.3		3	0.4		0.5	0		0	0.2		0.3	0		0	0		0	2.58	....
Cull fruits—																																		
1912	10	2	7																														1.33	....
1913	3	2	46																														4.67	....
1914	0	8	5																														1.67	....
1915	1	10	13																														4.33	....
Average	3.8		18																														3.00	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
66, tree No. 23-76-21, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	82 5	143	0 4	1	0 6	1	1 13	5	11 1	26	11 3	24	21 5	38	1 12	3	16 14	27	7 9	11	0 0	0	0.89	2
1913	120 4	476	56 5	240	40 1	132	11 5	33	8 4	22	0 7	1	0 12	2	0 0	0	0 0	0	0 0	0	0 0	0	3.56	0
1914	129 11	358	29 0	99	37 4	104	34 8	87	22 1	50	6 6	13	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.11	17
1915	127 10	383	16 5	63	33 12	109	27 2	78	33 14	87	11 9	26	3 6	7	0 0	0	0 0	0	0 0	0	0 0	0	3.89	14
Average	**115.0**	**340**	**25.2**	**101**	**27.9**	**87**	**18.7**	**51**	**18.8**	**46**	**7.4**	**16**	**6.4**	**12**	**0.4**	**1**	**4.2**	**7**	**1.9**	**3**	**0**	**0**	**2.61**	**8**
67, tree No. 23-89-1, Rough strain:																								
Orchard grade—																								
1912	47 3	108	0 13	3	3 6	10	3 3	9	13 14	34	12 6	26	9 3	18	2 1	4	2 5	4	0 0	0	0 0	0	.33	....
1913	54 4	189	27 5	108	18 0	57	5 4	15	2 11	7	0 8	1	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1914	47 0	145	27 12	94	13 10	37	3 8	9	2 2	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.67	....
1915	32 3	86	1 1	4	3 14	12	7 4	21	12 13	33	5 11	13	1 8	3	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
Average	45.2	132	14.2	52	9.7	29	4.8	14	7.9	20	4.6	10	2.8	6	0.5	1	0.6	1	0	0	0	0	3.67	....
Standard grade—																								
1912	85 15	187	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	37 13	158	31 9	140	4 5	13	1 7	4	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.67	....
1914	79 2	253	36 2	135	22 3	66	11 7	30	8 0	19	1 6	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	63 2	185	2 12	11	20 10	68	21 2	60	11 0	28	7 10	18	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
Average	66.5	196	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.50	....
Cull fruits—																								
1912	0 0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	6 7	69	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.33	....
1914	1 5	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.33	....
1915	3 6	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.67	....
Average	2.8	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.83	....

Total crop—																														
1912	133	2	295																								.67	164		
1913	98	8	416	58	14	248	22	5	70	6	11	19	3	3	8	0	8	1	0	8	1	0	0	0	0	0	0	0	0	0	4.00	371
1914	127	7	408	63	14	229	35	13	103	14	15	39	10	2	24	1	6	3	0	0	0	0	0	0	0	0	0	0	0	0	4.78	240
1915	98	11	285	3	13	15	24	8	80	28	6	81	23	13	61	13	5	31	1	8	3	0	0	0	0	0	0	0	0	0	3.89	178
Average	**114.4**		**351**																								**3.33**	**238**		
68, tree No. 27-82-18, Smooth strain:																														
Orchard grade—																														
1912	136	12	281	2	11	10	6	9	20	2	10	8	19	1	48	22	5	49	35	2	69	5	11	10	30	8	50	12	3	17	0	0	0	.33	....	
1913	93	1	249	7	11	30	16	14	54	15	10	43	31	6	78	12	0	26	6	11	13	1	9	3	1	4	2	0	0	0	0	0	0	2.00	....	
1914	109	1	303	24	8	79	38	14	110	34	6	88	10	14	25	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....	
1915	36	13	82	0	0	0	0	0	0	1	13	5	13	13	33	11	14	26	8	3	16	1	2	2	0	0	0	0	0	0	0	0	0	4.67	....	
Average	93.9		229	8.7		30	15.6		46	13.6		36	18.8		46	11.7		26	12.5		25	2.1		4	7.9		13	3.1		4	0		0	3.00	....	
Standard grade—																														
1912	5	7	12	0	4	1	0	0	0	0	12	2	0	7	1	1	7	3	2	9	5	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....	
1913	26	6	101	13	10	61	6	11	23	3	8	11	2	1	5	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.67	....	
1914	24	12	80	9	2	35	7	0	22	3	14	11	4	5	11	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....	
1915	8	4	20	1	0	3	1	2	3	3	3	8	1	14	4	0	0	0	0	8	1	0	9	1	0	0	0	0	0	0	0	0	0	3.33	....	
Average	16.2		53	6.0		25	3.7		12	2.8		8	2.2		5	0.6		1	0.8		2	0.1		0.3	0		0	0		0	0		0	2.16	....	
Cull fruits—																														
1912	7	4	17																															.33	....	
1913	4	4	56																															1.00	....	
1914	2	14	16																															4.00	....	
1915	0	0	0																															(a)	....	
Average	3.6		22																															1.78	....	
Total crop—																														
1912	149	7	310	2	15	11	6	9	20	3	6	10	19	8	49	23	12	52	37	11	74	5	11	10	30	8	50	12	3	17	0	0	0	.56	0	
1913	123	11	406	21	5	91	23	9	77	19	2	54	33	7	83	12	8	27	6	11	13	1	9	3	1	4	2	0	0	0	0	0	0	1.63	1	
1914	136	11	399	33	10	114	45	14	132	38	4	99	15	3	36	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.89	2	
1915	45	1	102	1	0	3	1	2	3	5	0	13	15	11	37	11	14	26	8	11	17	1	11	3	0	0	0	0	0	0	0	0	0	4.00	0	
Average	**113.7**		**304**	**14.7**		**55**	**19.3**		**58**	**16.4**		**44**	**21.0**		**51**	**12.3**		**27**	**13.3**		**26**	**2.2**		**4**	**7.9**		**13**	**3.1**		**4**	**0**		**0**	**2.41**	**0.8**	
69, tree No. 23-87-3, Valencia strain:																														
Orchard grade—																														
1912	60	6	116	0	14	1	1	15	6	2	10	7	8	12	20	10	5	21	17	0	32	4	14	8	6	14	11	7	2	10	0	0	0	.33	....	
1913	89	10	312	41	13	177	22	2	70	10	15	30	10	13	27	1	12	4	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	1.67	....	
1914	67	1	178	22	0	70	20	3	52	15	2	36	7	12	16	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....	
1915	88	7	232	3	15	14	9	13	31	19	12	56	35	11	90	11	13	26	6	14	14	0	9	1	0	0	0	0	0	0	0	0	0	4.33	....	
Average	76.4		210	17.1		66	13.5		40	12.1		32	15.8		38	6.5		14	6.5		13	1.4		2	1.7		3	1.8		3	0		0	2.75	....	

[a] No count was made to determine the seed content of the fruits in this group.

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
69, tree No. 23-87-3, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	37 7	74	1 8	5	1 6	4	1 15	5	6 3	14	7 3	14	9 11	17	0 9	1	9 0	14	0 0	0	0 0	0	0.33	....
1913	24 12	106	20 4	93	1 14	6	1 0	3	1 4	3	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1914	29 0	83	8 12	30	10 5	29	4 11	12	3 6	8	1 14	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	31 13	100	6 10	26	14 2	46	5 6	15	3 5	8	1 6	3	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
Average	30.8	91	9.3	39	6.9	21	3.3	9	3.5	8	2.7	6	2.7	5	0.1	0.3	2.3	4	0	0	0	0	2.58	....
Cull fruits—																								
1912	13 1	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	....
1913	3 2	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	....
1914	3 4	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	....
1915	3 7	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
Average	5.7	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
Total crop—																								
1912	110 14	215	2 6	6	3 5	10	4 9	12	14 15	34	17 8	35	26 11	49	5 7	9	15 14	25	7 2	10	0 0	0	.67	19
1913	117 8	453	62 1	270	24 0	76	11 15	33	12 1	30	2 2	50	2 3	4	0 0	0	0 0	0	0 0	0	0 0	0	2.11	7
1914	99 5	277	30 12	100	30 8	81	19 13	48	11 2	24	3 14	8	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.11	36
1915	123 11	339	10 9	40	23 15	77	25 2	71	39 0	98	13 3	29	7 14	16	0 9	1	0 0	0	0 0	0	0 0	0	3.78	30
Average	**112.8**	**321**	**26.4**	**104**	**20.4**	**61**	**14.4**	**41**	**19.3**	**47**	**9.2**	**31**	**9.2**	**17**	**1.5**	**3**	**4.0**	**6**	**1.8**	**3**	**0**	**0**	**2.44**	**23**
70, tree No. 23-85-9, Valencia strain:																								
Orchard grade—																								
1912	76 3	168	0 12	3	2 8	7	5 7	15	21 8	51	19 0	41	21 2	41	2 12	5	2 8	4	0 10	1	0 0	0	0	....
1913	71 0	231	21 8	93	17 15	58	9 2	26	17 13	44	3 1	7	1 9	3	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1914	104 6	285	38 6	118	37 13	102	18 3	44	5 13	13	3 11	7	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	94 11	264	4 14	19	8 10	29	24 9	75	36 15	97	13 2	30	5 7	12	1 2	2	0 0	0	0 0	0	0 0	0	6.67	....
Average	86.7	237	16.4	58	16.7	49	14.4	40	20.5	51	9.7	21	7.2	14	1.0	2	0.6	1	0.2	0.3	0	0	3.08	....

| | | |

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
71, tree No. 23-91-10, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	145 8	355	2 10	10	13 9	41	20 14	57	44 4	108	25 12	57	23 0	45	2 4	4	2 7	4	0 0	0	0 0	0	0.56	1
1913	67 13	310	34 14	149	15 6	50	5 5	15	4 9	12	2 12	6	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.56	0
1914	139 13	479	100 4	362	29 11	87	6 10	17	1 10	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	4
1915	92 5	227	1 1	3	7 10	22	17 1	47	35 15	89	19 7	43	7 14	16	2 5	4	0 10	1	0 0	0	0 0	0	5.25	1
Average	**111.4**	**343**	**34.7**	**131**	**16.6**	**50**	**12.5**	**34**	**21.6**	**53**	**12.0**	**27**	**7.7**	**15**	**1.1**	**2**	**0.8**	**1**	**0**	**0**	**0**	**0**	**3.71**	**2**
72, tree No. 23-90-3, Valencia strain:																								
Orchard grade—																								
1912	95 8	220	3 14	14	7 15	24	9 2	25	26 2	63	19 7	42	17 12	34	1 13	3	8 12	14	0 11	1	0 0	0	0	....
1913	86 12	299	45 0	176	29 8	91	6 5	18	4 9	11	0 14	2	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1914	86 0	256	45 6	153	21 2	57	13 0	32	6 0	13	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1915	49 7	131	2 13	9	6 2	19	9 14	28	21 2	54	7 1	16	2 7	5	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
Average	79.4	227	24.3	88	16.2	48	9.6	26	14.5	35	7.0	15	5.2	10	0.5	1	2.2	4	0.2	0.3	0	0	2.67	....
Standard grade—																								
1912	54 7	126	6 0	22	4 12	14	6 2	16	9 13	23	7 7	15	13 2	24	1 1	2	6 2	10	0 0	0	0 0	0	0	....
1913	20 4	92	18 6	86	1 9	5	0 5	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1914	7 11	28	5 14	23	1 0	3	0 6	1	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	29 1	90	4 1	16	11 14	38	9 9	27	2 11	7	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
Average	27.9	84	8.6	37	4.8	15	4.1	11	3.2	8	2.1	4	3.3	6	0.3	0.5	1.6	3	0	0	0	0	2.66	....
Cull fruits—																								
1912	4 7	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.33	....
1913	3 6	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.67	....
1914	1 12	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1915	1 13	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.67	....
Average	2.8	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.09	....

Total crop—																														
1912	154	6	356	9	14	36	12	11	38	15	4	41	35	15	86	26	14	57	30	14	58	2	14	5	14	14	24	0	11	1	0	0	0	.11	1
1913	110	6	442	63	6	262	31	1	96	6	10	19	4	9	11	0	14	2	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.33	3
1914	95	7	293	51	4	176	22	2	60	13	6	33	6	7	14	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	19
1915	80	5	229	6	14	25	18	0	57	19	7	55	23	13	61	7	15	18	2	7	5	0	0	0	0	0	0	0	0	0	0	0	0	5.11	13
Average	**110.1**		**330**	**32.8**		**125**	**21.0**		**63**	**13.7**		**37**	**17.7**		**43**	**9.1**		**20**	**8.5**		**16**	**0.7**		**1**	**3.7**		**6**	**0.2**		**0.3**	**0**		**0**	**2.81**	**9**
73, tree No. 23-91-4, Valencia strain:																																			
Orchard grade—																																			
1912	93	3	221	1	15	7	7	10	24	8	7	24	27	11	68	19	9	43	24	1	48	2	2	4	1	12	3	0	0	0	0	0	0	1.00	....
1913	42	15	137	9	3	38	15	11	51	7	12	23	7	12	20	1	0	2	1	9	3	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1914	123	9	418	85	5	307	32	0	94	5	8	15	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1915	76	5	232	15	3	56	17	4	56	16	5	48	23	14	63	3	11	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.00	....
Average	84.0		252	27.9		102	18.1		56	9.5		28	15.0		38	6.1		14	6.4		13	0.5		1	0.4		1	0		0	0		0	4.50	....
Standard grade—																																			
1912	26	5	60	2	2	7	0	15	3	4	11	13	1	10	4	5	11	12	7	5	14	1	11	3	2	4	4	0	0	0	0	0	0	.33	....
1913	15	12	66	10	13	50	3	14	13	0	11	2	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1914	8	13	41	8	13	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1915	37	0	138	19	6	80	14	4	48	2	10	8	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.33	....
Average	22.0		76	10.3		45	4.8		16	2.0		6	0.7		2	1.4		3	1.8		4	0.4		1	0.6		1	0		0	0		0	5.00	....
Cull fruits—																																			
1912	2	7	8	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	3.00	....
1913	2	7	42	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	3.67	....
1914	2	0	12	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	4.67	....
1915	2	0	11	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	5.67	....
Average	2.2		18	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	3.92	....
Total crop—																																			
1912	121	15	289	4	1	14	8	9	27	13	2	37	29	5	72	25	4	55	31	6	62	3	13	7	4	0	7	0	0	0	0	0	0	1.44	0
1913	61	2	245	20	0	88	19	9	64	8	7	25	8	2	21	1	0	2	1	9	3	0	0	0	0	0	0	0	0	0	0	0	0	4.44	0
1914	134	6	471	94	2	348	32	0	94	5	8	15	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.78	3
1915	115	5	381	34	9	136	31	8	104	18	15	56	24	10	65	3	11	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.67	0
Average	**103.2**		**346**	**38.2**		**147**	**22.9**		**72**	**11.5**		**33**	**15.7**		**40**	**7.5**		**17**	**8.2**		**16**	**1.0**		**2**	**1.0**		**2**	**0**		**0**	**0**		**0**	**4.58**	**0.8**
74, tree No. 27-82-14, Long strain:																																			
Orchard grade—																																			
1912	144	9	330	7	10	26	20	0	55	18	10	47	41	3	92	29	7	60	22	15	42	2	6	4	1	12	3	0	10	1	0	0	0	.33	....
1913	103	5	321	45	13	171	28	13	84	9	15	25	15	2	34	2	0	4	1	10	3	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....
1914	2	5	6	0	0	0	1	2	3	0	6	1	0	6	1	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	15	15	40	0	9	2	3	0	9	2	5	6	7	12	18	1	13	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	1.33	....
Average	66.5		174	13.5		50	13.2		38	7.8		20	16.1		36	8.4		17	6.3		12	0.6		1	0.4		1	0.2		0.3	0		0	1.58	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
74, tree No. 27–82–14, Long strain—Continued.																								
Standard grade—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	39 0	91	4 8	16	3 3	9	4 8	12	12 7	28	5 11	11	7 7	13	0 0	0	1 4	2	0 0	0	0 0	0	0.33	....
1913	24 9	101	18 14	85	4 3	12	1 2	3	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1914	75 15	226	39 2	128	28 8	78	4 8	11	2 15	7	0 7	1	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	1.33	....
1915	3 13	10	0 9	2	0 15	3	0 7	1	1 6	3	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
Average	35.8	107	15.8	58	9.2	26	2.6	7	4.3	10	1.7	3	2.0	4	0	0	0.3	0.5	0	0	0	0	1.75	....
Cull fruits—																								
1912	12 13	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	3 15	67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	....
1914	1 11	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
1915	1 1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
Average	4.9	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.25	....
Total crop—																								
1912	196 6	455	12 2	42	23 3	64	23 2	59	53 10	120	35 2	71	30 6	55	2 6	4	3 0	5	0 10	1	0 0	0	.22	34
1913	131 13	489	64 11	256	33 0	96	11 1	28	15 8	35	2 0	4	1 10	3	0 0	0	0 0	0	0 0	0	0 0	0	1.44	1
1914	79 15	238	39 2	128	29 10	81	4 14	12	3 5	8	0 14	2	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	2.44	23
1915	20 13	53	1 2	4	3 15	12	2 12	7	9 2	21	2 5	5	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	2.00	19
Average	**107.2**	**309**	**29.3**	**108**	**22.4**	**63**	**10.5**	**27**	**20.4**	**46**	**10.1**	**21**	**8.2**	**15**	**0.6**	**1**	**0.8**	**1**	**0.2**	**0.3**	**0**	**0**	**1.53**	**19**
75, tree No. 23–77–19, Valencia strain:																								
Orchard grade—																								
1912	83 13	214	3 2	12	14 9	45	11 6	31	28 0	71	13 14	30	10 8	21	1 2	2	1 4	2	0 0	0	0 0	0	1.33	....
1913	97 8	326	31 0	125	36 7	119	17 3	50	10 11	27	2 3	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	66 3	170	11 7	36	19 14	51	26 8	65	7 4	16	1 2	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	....
1915	88 3	251	9 10	35	19 2	60	20 5	58	30 15	80	5 3	12	2 8	5	0 8	1	0 0	0	0 0	0	0 0	0	4.33	....
Average	83.9	240	13.8	52	22.5	69	18.8	51	19.2	49	5.6	12	3.3	7	0.4	1	0.3	0.5	0	0	0	0	2.75	....

Standard grade—																																
1912	23	8	59	1	2	4	3	9	11	5	7	15	4	13	12	2	0	4	6	1	12	0	0	0	0	8	1	0	0	0	0	0	0	2.67	....
1913	16	9	69	12	15	55	2	12	10	0	6	2	0	4	1	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
1914	7	9	20	1	3	4	3	0	9	0	6	1	0	14	2	1	8	3	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	6.00	....
1915	32	3	99	6	8	26	8	6	28	9	4	26	4	7	11	3	2	7	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
Average	20.0		62	5.4		22	4.4		15	3.9		11	2.6		7	1.7		4	1.6		3	0	0	0	0.3		0.5	0		0	0		0	4.75	....
Cull fruits—																																
1912	6	0	15																													2.33	....
1913	2	0	29																													4.67	....
1914	0	8	4																													.67	....
1915	1	10	9																													5.67	....
Average	2.5		14																													3.34	....
Total crop—																																
1912	113	5	288	4	4	16	18	2	56	16	13	46	32	13	83	15	14	34	16	9	33	1	2	2	1	12	3	0	0	0	0	0	0	2.11	3
1913	116	1	424	43	15	180	39	3	129	17	9	52	10	15	28	2	7	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.44	11
1914	74	4	194	12	10	40	22	14	60	26	14	66	8	2	18	2	10	5	0	0	0	0	0	0	0	10	1	0	0	0	0	0	0	3.00	12
1915	122	0	359	16	2	61	27	8	88	29	9	84	35	6	91	8	5	19	3	0	6	0	8	1	0	0	0	0	0	0	0	0	0	4.89	22
Average	**106.4**		**316**	**19.2**		**74**	**26.9**		**83**	**22.7**		**62**	**21.8**		**55**	**7.3**		**16**	**4.9**		**10**	**0.4**		**1**	**0.6**		**1**	**0**		**0**	**0**		**0**	**3.61**	**12**
76, tree No. 27–83–13, Corrugated strain:																																
Orchard grade—																																
1912	31	6	80	0	12	3	4	4	14	4	6	13	8	13	22	3	13	9	5	10	12	1	8	3	2	4	4	0	0	0	0	0	0	1.00	....
1913	27	4	80	4	3	16	7	8	24	5	7	15	7	6	19	2	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1914	27	2	71	3	7	11	7	6	21	9	11	24	5	11	13	0	7	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1915	15	7	32	0	0	0	0	0	0	0	11	2	2	0	5	2	4	5	6	1	12	3	3	6	1	4	2	0	0	0	0	0	0	6.33	....
Average	25.3		66	2.1		8	4.8		15	5.0		14	6.0		15	2.3		5	3.0		6	1.2		2	0.9		2	0		0	0		0	3.92	....
Standard grade—																																
1912	115	9	268																													0	....
1913	107	5	407																													3.67	....
1914	84	3	235	11	12	43	22	6	68	15	10	42	21	2	52	9	8	22	3	13	8	0	0	0	0	0	0	0	0	0	0	0	0	1.33	....
1915	10	12	23	0	0	0	0	0	0	0	11	2	1	2	3	3	11	8	3	9	7	1	1	2	0	10	1	0	0	0	0	0	0	3.67	....
Average	79.5		233																													2.17	....
Cull fruits—																																
1912	0	0	0																													0	....
1913	3	0	31																													.33	....
1914	1	3	5																													1.33	....
1915	0	0	0																													(*a*)	....
Average	1.0		9																													.55	....

a No count was made to determine the seed content of the fruits in this group.

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
76, tree No. 27-83-13, Corrugated strain—Continued.																								
Total crop—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	146 15	348	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.33	109
1913	137 9	518	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	203
1914	112 8	311	15 3	54	29 12	89	25 5	66	26 13	65	9 15	23	4 5	9	0 0	0	0 0	0	0 0	0	0 0	0	2.67	115
1915	26 3	55	0 0	0	0 0	0	1 6	4	3 2	8	5 15	13	9 10	19	4 4	8	1 14	3	0 0	0	0 0	0	5.00	40
Average	**105.8**	**308**	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	**2.36**	**117**
77, tree No. 23-88-3, Corrugated strain:																								
Orchard grade—																								
1912	19 13	43	0 0	0	0 5	1	1 2	3	2 6	6	5 0	11	8 0	17	0 8	1	1 13	3	0 11	1	0 0	0	1.00	....
1913	20 10	69	10 0	38	6 6	20	1 6	4	1 15	5	0 15	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1914	19 12	62	12 4	42	4 11	13	2 6	6	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	19 1	50	0 7	2	1 12	6	2 6	7	6 15	18	6 2	14	0 15	2	0 8	1	0 0	0	0 0	0	0 0	0	4.33	....
Average	19.8	56	5.7	21	3.3	10	1.8	5	2.9	8	3.0	7	2.2	5	0.3	0.5	0.5	0.8	0.2	0.3	0	0	3.33	....
Standard grade—																								
1912	124 12	279	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	....
1913	72 14	271	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.00	....
1914	92 15	310	45 14	175	32 8	97	11 2	30	2 1	5	1 6	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1915	45 4	129	2 13	11	10 12	35	16 8	47	5 1	13	8 5	19	1 5	3	0 8	1	0 0	0	0 0	0	0 0	0	2.67	....
Average	84.0	247	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.25	....
Cull fruits—																								
1912	0 0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	3 0	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.67	....
1914	1 12	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1915	2 4	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.00	....
Average	1.8	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....

Total crop—																														
1912	144	9	322																									.78	101
1913	96	8	369																									4.33	161
1914	114	7	383	58	2	217	37	3	110	13	8	36	2	8	6	1	6	3	0	0	0	0	0	0	0	0	0	0	0	2.78	116
1915	66	9	187	3	4	13	12	8	41	18	14	54	12	0	31	14	7	33	2	4	5	1	0	2	0	0	0	0	0	4.00	102
Average	**105.5**		**315**																									**2.97**	**120**
78, tree No. 23-76-19, Corrugated strain:																														
Orchard grade—																														
1912	18	9	41	0	0	0	1	6	3	1	3	3	4	0	10	3	9	8	5	2	11	1	9	3	1	12	3	0	0	0	0	0	1.67	....
1913	14	13	44	0	7	2	6	7	21	3	2	9	2	10	7	1	11	4	0	8	1	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1914	15	6	48	7	8	26	4	6	13	3	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	3.00	....
1915	12	2	29	0	4	1	0	10	2	0	5	1	4	13	12	3	1	7	1	7	3	1	10	3	0	0	0	0	0	0	0	0	3.33	....
Average	15.2		41	2.0		7	3.2		10	1.9		5	2.9		7	2.1		5	1.8		4	0.8		2	0.4		0.8	0.1		0.3	0	0	3.25	....
Standard grade—																														
1912	108	3	240																											2.67	....
1913	63	8	206																											4.33	....
1914	134	7	444	69	4	264	37	5	108	17	10	47	9	8	23	0	6	1	0	6	1	0	0	0	0	0	0	0	0	0	0	0	.67	....
1915	39	5	95	0	14	4	3	14	13	6	0	17	7	3	18	11	6	25	4	9	9	2	5	4	3	2	5	0	0	0	0	0	2.67	....
Average	86.4		246																											2.59	....
Cull fruits—																														
1912	0	0	0																											0	....
1913	1	14	18																											.33	....
1914	1	10	11																											2.00	....
1915	1	3	6																											3.67	....
Average	1.2		9																											1.50	....
Total crop—																														
1912	126	12	281																											1.44	49
1913	80	3	268																											3.00	115
1914	151	7	503	76	12	290	41	11	121	20	10	55	9	8	23	0	6	1	0	6	1	0	0	0	0	0	0	0	8	1	0	0	1.89	82
1915	52	10	130	1	2	5	4	8	15	6	5	18	12	0	30	14	7	32	6	0	12	3	15	7	3	2	5	0	0	0	0	0	3.22	64
Average	**102.8**		**296**																											**2.39**	**78**
79, tree No. 23-77-16, Corrugated strain:																														
Orchard grade—																														
1912	19	2	36	0	0	0	0	5	1	0	6	1	3	7	1	3	7	8	4	11	8	0	9	1	3	8	6	2	13	4	0	0	0	....
1913	30	5	91	6	8	25	9	10	30	4	8	13	6	13	17	2	4	5	0	10	1	0	0	0	0	0	0	0	0	0	0	0	5.67	....
1914	38	10	115	14	10	51	12	14	36	8	10	22	2	8	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	12	2	29	0	8	2	0	0	0	2	3	6	3	10	9	2	4	5	3	0	6	0	9	1	0	0	0	0	0	0	0	0	4.00	....
Average	25.0		68	5.4		20	5.7		17	3.9		11	4.1		8	2.0		5	2.1		4	0.3		0.5	0.9		2	0.7		1	0	0	3.08	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
79, tree No. 23-77-16, Corrugated strain—Continued.																								
Standard grade—	*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*		*Lbs.oz.*			
1912	77 15	148	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
1913	63 5	227	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	.....
1914	129 8	410	59 12	222	36 5	105	17 9	46	13 2	31	1 14	4	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	1.67	.....
1915	34 3	92	2 12	13	4 10	15	6 14	20	7 3	18	8 14	19	3 4	6	0 10	1	0 0	0	0 0	0	0 0	0	2.00	.....
Average	76.2	219	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	.....
Cull fruits—																								
1912	0 0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
1913	2 8	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	.....
1914	1 6	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	.....
1915	1 0	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	.....
Average	1.2	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.75	.....
Total crop—																								
1912	97 1	184	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	72
1913	96 2	345	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.22	170
1914	169 8	538	74 6	273	49 3	141	26 3	68	15 10	37	1 14	4	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	1.67	161
1915	47 5	126	3 4	15	4 10	15	9 1	26	10 13	27	11 2	24	6 4	12	1 3	2	0 0	0	0 0	0	0 0	0	3.33	48
Average	102.5	298	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.06	113
80, tree No. 23-75-21, Valencia strain:																								
Orchard grade—																								
1912	46 11	112	1 2	4	5 3	16	4 13	14	15 4	38	8 7	19	7 6	15	1 8	4	2 6	4	0 10	1	0 0	0	4.00	.....
1913	63 2	196	15 10	58	20 4	65	10 4	29	14 5	37	2 3	5	0 8	2	0 0	0	0 0	0	0 0	0	0 0	0	3.67	.....
1914	52 15	148	14 2	46	20 5	57	11 0	28	6 8	15	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.33	.....
1915	51 2	119	0 0	0	1 4	4	4 2	12	16 10	42	8 10	20	13 4	28	5 8	10	1 12	3	0 0	0	0 0	0	3.67	.....
Average	53.5	144	7.7	27	11.8	36	7.5	21	14.4	33	5.1	12	5.3	11	1.8	3	1.0	2	0.2	0.3	0	0	2.67	.....

Standard grade—																																
1912	63	4	158	3	15	14	7	1	22	9	8	26	14	13	37	8	10	22	11	15	24	3	3	6	4	3	7	0	0	0	0	0	0	.33	....
1913	48	6	178	26	9	112	11	13	39	5	10	16	3	8	9	0	6	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	1.67	....
1914	31	14	97	10	12	40	9	0	28	5	5	14	3	0	7	3	4	7	0	0	0	0	9	1	0	0	0	0	0	0	0	0	0	2.00	....
1915	32	12	96	2	14	15	5	6	18	6	14	20	6	15	19	7	11	18	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
Average	44.1		132	11.0		45	8.3		27	6.8		19	7.1		18	5.0		12	3.9		8	0.9		2	1.1		2	0		0	0		0	2.00	....
Cull fruits—																																			
1912	13	2	28																															.33	....
1913	2	4	36																															2.67	....
1914	1	12	7																															2.67	....
1915	0	9	3																															3.00	....
Average	4.4		19																															2.17	....
Total crop—																																			
1912	123	1	298	5	1	18	12	4	38	14	5	40	30	1	75	17	1	41	19	5	39	4	11	7	6	9	11	0	1	10	0	0	0	.56	15
1913	113	12	410	42	3	170	32	1	104	15	14	45	17	13	46	2	9	6	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	.44	22
1914	86	9	252	24	14	86	29	5	85	16	5	42	9	8	22	4	4	9	0	0	0	0	9	1	0	0	0	0	0	0	0	0	0	2.33	32
1915	84	7	218	2	14	15	6	10	22	11	0	32	23	9	61	16	5	38	16	4	34	5	8	10	1	12	3	0	0	0	0	0	0	3.89	18
Average	102.0		235	18.8		72	20.1		62	14.4		40	20.2		51	10.1		24	9.1		19	2.7		5	2.1		4	0.2		0.3	0		0	2.56	22
81, tree No. 23-75-18, Valencia strain:																																			
Orchard grade—																																			
1912	59	1	134	0	10	2	2	5	7	2	12	7	15	10	36	10	0	22	15	10	40	4	0	7	5	6	9	2	12	4	0	0	0	3.33	....
1913	64	12	208	21	14	85	19	2	62	13	3	37	6	15	17	1	15	4	1	1	2	0	0	0	0	10	1	0	0	0	0	0	0	6.33	....
1914	76	10	194	12	11	49	16	13	46	24	13	61	17	10	39	2	7	5	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	97	3	241	0	8	2	5	0	15	16	8	47	36	15	94	24	6	55	10	11	22	3	3	6	0	0	0	0	0	0	0	0	0	5.67	....
Average	74.4		194	9.1		35	10.8		33	14.3		38	19.2		47	9.7		22	7.4		17	1.8		3	1.5		3	0.7		1	0		0	5.08	....
Standard grade—																																			
1912	25	1	56	0	18	2	1	12	5	2	2	6	6	10	16	3	11	8	7	6	14	1	1	2	1	15	3	0	0	0	0	0	0	1.00	....
1913	20	7	88	15	4	72	3	12	12	1	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33	....
1914	14	6	40	2	12	10	3	2	9	1	8	4	5	10	14	1	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	22	15	60	0	11	3	3	14	12	6	12	18	5	11	14	5	15	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
Average	20.7		61	5.0		22	3.1		10	3.0		8	4.5		11	2.8		6	1.8		4	0.3		0.5	0.5		1	0		0	0		0	3.33	....
Cull fruits—																																			
1912	16	9	42																															1.67	....
1913	3	9	47																															3.33	....
1914	1	12	7																															5.00	....
1915	1	9	7																															6.33	....
Average	5.9		26																															4.08	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
81, tree No. 23-75-18, Valencia strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	100 11	232	1 2	4	4 1	12	4 14	13	22 4	52	13 11	30	26 0	54	5 1	9	7 5	12	2 12	4	0 0	0	2.00	2
1913	88 12	343	37 2	157	22 14	74	14 10	41	6 15	17	1 15	4	1 1	2	0 0	0	0 10	1	0 0	0	0 0	0	5.00	3
1914	92 12	241	15 7	49	19 15	55	26 5	65	23 4	53	3 13	8	2 4	4	0 0	0	0 0	0	0 0	0	0 0	0	4.22	9
1915	121 11	308	1 3	5	8 14	27	23 4	65	42 10	108	30 5	68	10 11	22	3 3	6	0 0	0	0 0	0	0 0	0	5.44	12
Average	**101.0**	**281**	**13.7**	**54**	**13.9**	**42**	**17.3**	**46**	**23.8**	**58**	**12.4**	**28**	**9.3**	**21**	**2.1**	**4**	**2.0**	**3**	**0.7**	**1**	**0**	**0**	**4.17**	**7**
82, tree No. 23-85-8, Unproductive strain:																								
Orchard grade—																								
1912	94 12	209	4 0	15	5 13	18	7 2	19	19 3	46	11 12	26	26 2	51	3 6	6	11 14	20	5 8	8	0 0	0	0	....
1913	72 2	218	19 7	81	12 6	40	11 4	32	13 1	33	6 0	13	6 8	13	1 1	2	1 12	3	0 11	1	0 0	0	3.67	....
1914	89 7	246	31 13	105	22 15	63	16 8	40	12 0	26	5 0	10	0 9	1	0 0	0	0 10	1	0 0	0	0 0	0	1.67	....
1915	65 15	164	1 8	6	2 1	7	9 4	28	24 7	63	13 10	31	8 13	18	4 15	9	0 10	1	0 11	1	0 0	0	4.33	....
Average	80.6	209	14.2	52	10.8	32	11.2	30	17.2	42	9.1	20	10.5	21	2.3	4	3.7	6	1.7	3	0	0	2.42	....
Standard grade—																								
1912	21 4	45	0 5	1	0 6	1	4 2	11	2 15	7	2 6	5	6 5	12	0 9	1	4 4	7	0 0	0	0 0	0	1.33	....
1913	16 8	67	10 8	51	1 12	6	1 14	5	0 12	2	0 0	0	1 0	2	0 0	0	0 10	1	0 0	0	0 0	0	1.00	....
1914	9 12	35	6 0	24	3 0	9	0 12	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1915	18 6	55	5 15	23	3 9	11	4 8	12	1 4	3	1 7	3	0 8	1	0 9	1	0 10	1	0 0	0	0 0	0	2.33	....
Average	16.5	51	5.7	25	2.2	7	2.8	8	1.2	3	1.0	2	2.0	4	0.3	0.5	1.4	2	0	0	0	0	1.67	....
Cull fruits—																								
1912	6 4	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	5 14	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1914	1 10	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1915	2 0	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
Average	3.9	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.47	....

Total crop—																														
1912	122	4	270	4	5	16	6	3	19	11	4	30	22	2	53	14	2	31	32	7	63	3	15	7	16	2	27	5	8	8	0	0	0	.44	5
1913	94	8	331	29	15	132	14	2	46	13	2	37	13	13	35	6	0	13	7	8	15	1	1	2	2	6	4	0	11	1	0	0	0	1.78	7
1914	100	13	290	37	13	129	25	15	72	17	4	42	12	0	26	5	0	10	0	9	1	0	0	0	0	10	1	0	0	0	0	0	0	2.22	21
1915	86	5	227	7	7	29	5	10	18	13	12	40	26	11	66	15	1	34	9	5	19	5	8	10	1	4	2	0	11	1	0	0	0	3.22	11
Average	**101.0**		**280**	**19.9**		**77**	**13.0**		**39**	**13.8**		**37**	**18.7**		**45**	**10.1**		**22**	**12.5**		**25**	**2.6**		**5**	**5.1**		**9**	**1.7**		**3**	**0**		**0**	**1.92**	**11**
83, tree No. 23–89–7, Valencia strain:																																			
Orchard grade—																																			
1912	47	8	93	0	8	2	0	0	0	3	0	8	6	0	14	8	7	18	13	2	25	3	9	6	7	5	12	5	9	8	0	0	0	.33	....
1913	84	8	263	19	6	81	26	13	83	19	10	54	16	11	41	1	6	3	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	2.33	....
1914	85	9	236	22	10	73	33	14	94	20	6	50	7	2	16	1	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.00	....
1915	68	5	178	0	10	3	8	4	26	9	11	28	28	8	74	13	0	30	6	10	14	1	10	3	0	0	0	0	0	0	0	0	0	7.33	....
Average	71.5		193	10.8		40	17.2		51	13.2		35	14.6		36	6.1		14	4.9		10	1.5		3	1.8		3	1.4		2	0		0	2.99	....
Standard grade—																																			
1912	28	9	58	0	14	3	1	12	5	1	2	3	4	14	11	4	2	8	9	3	17	1	10	3	5	0	8	0	0	0	0	0	0	.67	....
1913	21	4	93	13	12	70	6	0	19	1	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1914	13	5	41	6	2	22	2	12	9	1	2	3	1	12	4	1	1	2	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	31	6	95	1	2	5	13	0	43	9	6	27	4	13	13	2	1	5	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	6.00	....
Average	23.6		72	5.5		25	5.9		19	3.3		9	2.9		7	1.8		4	2.7		5	0.4		1	1.3		2	0		0	0		0	3.17	....
Cull fruits—																																			
1912	10	0	18	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.33	....
1913	7	6	101	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	3.00	....
1914	1	5	6	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	4.33	....
1915	2	10	12	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	5.00	....
Average	5.3		34	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	3.42	....
Total crop—																																			
1912	86	1	169	1	6	5	1	12	5	4	2	11	10	14	25	12	9	26	22	5	42	5	3	9	12	5	20	5	9	8	0	0	0	.78	0
1913	113	2	457	33	2	151	32	13	102	21	2	58	16	11	41	1	6	3	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	2.89	1
1914	100	3	283	28	12	95	36	10	103	21	8	53	8	14	20	2	10	5	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.00	8
1915	102	5	285	1	12	8	21	4	69	19	1	55	33	5	87	15	1	35	7	10	16	1	10	3	0	0	0	0	0	0	0	0	0	6.11	6
Average	**100.4**		**299**	**16.3**		**65**	**23.1**		**70**	**16.5**		**44**	**17.4**		**43**	**7.9**		**17**	**7.6**		**15**	**1.9**		**3**	**3.1**		**5**	**1.4**		**2**	**0**		**0**	**3.20**	**4**
84, tree No. 23–75–23, Valencia strain:																																			
Orchard grade—																																			
1912	44	14	91	0	4	1	1	6	4	1	2	3	7	4	17	9	4	20	9	4	19	2	2	4	10	2	17	4	2	6	0	0	0	1.00	....
1913	98	14	350	47	11	193	37	2	118	8	11	25	4	8	12	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1914	53	1	145	17	2	56	13	2	37	10	0	25	10	10	24	0	7	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	76	5	212	5	7	20	10	13	34	16	2	47	29	2	77	11	9	27	3	4	7	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
Average	68.3		200	17.6		68	15.6		48	9.0		25	12.9		33	5.5		13	3.4		7	0.5		1	2.5		4	1.0		2	0		0	3.42	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
84, tree No. 23-75-23, Valencia strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	27 4	55	0 3	0	1 3	3	2 4	6	5 4	12	5 7	11	5 3	10	1 3	2	6 9	11	0 0	0	0 0	0	0.67	....
1913	23 9	113	21 9	105	1 11	7	0 5	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1914	13 14	45	6 2	24	3 10	11	1 8	4	2 2	5	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
1915	44 11	136	6 3	29	9 4	30	10 2	29	11 6	30	7 12	18	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.67	....
Average	27.3	87	8.5	40	3.9	13	3.5	10	4.7	12	3.5	8	1.3	3	0.3	0.5	1.6	3	0	0	0	0	3.92	....
Cull fruits—																								
1912	12 10	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1913	2 9	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.33	....
1914	1 0	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
1915	2 11	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
Average	4.7	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.67	....
Total crop—																								
1912	84 12	167	0 7	1	2 9	7	3 6	9	12 8	29	14 11	31	14 7	29	3 5	6	16 11	28	4 2	6	0 0	0	.78	5
1913	125 0	507	69 4	298	38 13	125	9 0	26	4 8	12	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	12
1914	67 15	197	23 4	80	17 6	48	11 8	29	12 12	29	0 15	2	1 2	2	0 0	0	0 0	0	0 0	0	0 0	0	3.56	18
1915	123 11	362	11 10	49	20 1	64	26 4	76	40 8	107	19 5	45	3 4	7	0 0	0	0 0	0	0 0	0	0 0	0	5.00	44
Average	**100.3**	**308**	**26.1**	**107**	**19.7**	**61**	**12.5**	**35**	**17.6**	**44**	**9.0**	**20**	**4.7**	**10**	**0.8**	**2**	**4.2**	**7**	**1.0**	**2**	**0**	**0**	**3.42**	**20**
85, tree No. 23-88-7, Valencia strain:																								
Orchard grade—																								
1912	22 5	38	0 4	1	0 0	0	0 0	0	1 4	3	0 15	2	7 7	14	1 11	3	3 2	5	7 10	10	0 0	0	1.33	....
1913	84 3	264	23 1	91	23 12	76	16 1	45	16 8	42	2 3	5	2 0	4	0 10	1	0 0	0	0 0	0	0 0	0	2.67	....
1914	83 11	209	11 11	38	18 12	50	27 9	66	22 8	49	2 1	4	1 2	2	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1915	96 6	277	5 2	19	14 13	49	28 5	84	39 15	106	6 13	16	0 14	2	0 8	1	0 0	0	0 0	0	0 0	0	4.00	....
Average	71.6	197	10.0	37	14.3	44	18.0	49	20.1	50	3.0	7	2.9	6	0.7	1	0.8	1	1.9	3	0	0	2.67	....

| | | |

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
86, tree No. 23-90-5, Unproductive strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	125 5	252	1 14	7	1 11	5	3 11	10	16 9	39	17 12	38	28 7	54	4 0	7	23 14	39	8 15	13	0 0	0	0.44	10
1913	68 2	280	31 10	140	18 6	57	7 5	20	6 2	15	0 13	2	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	3.89	4
1914	130 5	435	76 12	286	31 6	90	13 6	34	6 6	14	0 8	1	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	3.78	54
1915	65 5	188	4 8	18	18 1	58	13 6	39	14 13	38	6 3	14	4 12	10	1 2	2	0 10	1	0 0	0	0 0	0	5.22	17
Average	**97.3**	**289**	**28.7**	**113**	**17.4**	**53**	**9.4**	**26**	**11.0**	**27**	**6.3**	**14**	**8.7**	**17**	**1.3**	**2**	**6.1**	**10**	**2.2**	**3**	**0**	**0**	**3.33**	**21**
87, tree No. 23-77-21, Valencia strain:																								
Orchard grade—																								
1912	22 2	40	0 4	1	0 0	0	0 6	1	1 10	4	2 6	5	6 6	12	0 9	1	3 2	5	7 7	11	0 0	0	1.33	....
1913	89 10	304	29 6	120	33 6	110	14 7	42	10 11	28	1 12	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	86 2	227	18 0	57	22 9	62	27 14	69	13 4	30	3 7	7	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1915	97 7	270	7 15	29	12 12	41	22 2	65	41 10	106	10 9	24	1 14	4	0 9	1	0 0	0	0 0	0	0 0	0	6.67	....
Average	73.8	210	13.9	52	17.2	53	16.2	44	16.8	42	4.5	10	2.3	5	0.3	0.5	0.8	1	1.9	3	0	0	3.25	....
Standard grade—																								
1912	11 11	23	0 4	1	0 5	1	0 6	1	3 3	7	0 9	1	3 12	7	0 10	1	2 10	4	0 0	0	0 0	0	.67	....
1913	23 12	107	18 10	90	3 13	13	0 15	3	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	14 11	48	6 8	26	3 10	11	1 7	4	1 3	3	1 6	3	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	32 5	103	5 6	18	16 9	56	7 0	21	2 12	7	0 10	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.67	....
Average	20.6	70	7.7	34	6.1	20	2.4	7	1.9	5	0.6	1	1.1	2	0.2	0.3	0.7	1	0	0	0	0	3.00	....
Cull fruits—																								
1912	3 8	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
1913	3 11	52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	....
1914	1 1	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
1915	1 6	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
Average	2.4	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.83	....

Total crop—																														
1912	37	5	69	0	8	2	0	5	1	0	12	2	4	13	11	2	15	6	10	2	19	1	3	2	5	12	9	7	7	11	0	0	0	1.33	0
1913	117	1	463	48	1	210	37	3	123	15	6	45	11	1	29	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	0
1914	101	14	288	24	8	83	26	3	73	29	5	73	14	7	33	4	13	10	1	9	3	0	0	0	0	0	0	0	0	0	0	0	0	2.56	4
1915	131	2	380	13	5	47	29	5	97	29	2	86	44	6	113	11	3	25	1	14	4	0	9	1	0	0	0	0	0	0	0	0	0	4.78	7
Average	**96.8**		**300**	**21.6**		**86**	**23.3**		**74**	**18.6**		**52**	**18.7**		**47**	**5.2**		**11**	**3.4**		**7**	**0.4**		**1**	**1.4**		**2**	**1.9**		**3**	**0**		**0**	**3.00**	**3**
88, tree No. 23-86-3, Valencia strain:																																			
Orchard grade—																																			
1912	44	4	84	0	0	0	0	5	1	1	2	3	3	13	9	9	15	21	10	5	20	4	1	7	11	2	18	3	9	5	0	0	0	1.33	....
1913	73	14	278	45	1	190	19	6	63	4	15	14	2	12	7	0	8	1	1	4	3	0	0	0	0	0	0	0	0	0	0	0	0	1.33	....
1914	64	13	157	6	13	21	19	9	51	17	3	41	15	14	34	3	2	6	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	88	0	253	3	13	15	9	8	33	27	10	85	34	10	92	7	13	18	4	1	9	0	9	1	0	0	0	0	0	0	0	0	0	8.00	....
Average	67.7		193	13.9		57	12.3		37	12.7		36	14.3		36	5.3		12	4.5		9	1.2		2	2.8		5	0.9		1	0		0	3.92	....
Standard grade—																																			
1912	25	4	49	0	0	0	0	0	0	1	3	3	4	7	10	5	7	11	8	13	16	1	10	3	3	12	6	0	0	0	0	0	0	.67	....
1913	20	14	101	18	0	92	2	1	7	0	6	1	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.67	....
1914	7	13	21	1	2	4	2	2	6	0	6	1	3	5	8	0	7	1	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	39	6	124	11	4	43	14	5	44	10	1	28	1	15	5	0	13	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
Average	23.3		74	7.6		35	4.6		14	3.0		8	2.5		6	1.7		4	2.6		5	0.4		1	0.9		2	0		0	0		0	2.59	....
Cull fruits—																																			
1912	10	0	22																															0	....
1913	3	13	62																															4.33	....
1914	0	8	2																															4.50	....
1915	1	12	8																															3.67	....
Average	4.0		24																															3.13	....
Total crop—																																			
1912	79	8	155	0	0	0	0	5	1	2	5	6	8	4	19	15	6	32	19	2	36	5	11	10	14	14	24	3	9	5	0	0	0	.56	11
1913	97	9	441	63	1	282	21	7	70	5	5	15	3	3	8	0	8	1	1	4	3	0	0	0	0	0	0	0	0	0	0	0	0	2.11	9
1914	73	2	180	7	15	25	21	11	57	17	9	42	19	3	42	3	9	7	2	11	5	0	0	0	0	0	0	0	0	0	0	0	0	4.63	15
1915	129	2	385	15	1	58	23	13	77	37	11	113	36	9	97	8	10	20	5	1	11	0	9	1	0	0	0	0	0	0	0	0	0	5.33	13
Average	**94.8**		**290**	**21.5**		**91**	**16.8**		**51**	**15.7**		**44**	**16.8**		**42**	**7.0**		**15**	**7.0**		**14**	**1.6**		**3**	**3.7**		**6**	**0.9**		**1**	**0**		**0**	**3.16**	**12**
89, tree No. 23-91-6, Coarse strain:																																			
Orchard grade—																																			
1912	6	3	11	0	0	0	0	0	0		0	0	0	6	1	0	0	0	2	4	4	0	9	1	2	6	4	0	10	1	0	0	0	.50	....
1913	104	12	398	44	3	203	31	12	113	8	15	28	14	1	40	2	17	7	3	2	7	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1914	12	5	40	4	10	18	5	0	15	2	4	6	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	16	14	33	0	0	0	0	5	1	0	6	1	1	10	4	2	5	5	5	0	10	4	12	8	1	13	3	0	11	1	0	0	0	5.67	....
Average	35.0		121	12.2		55	9.3		32	3.1		9	4.1		12	1.3		3	2.6		5	1.3		2	1.1		2	0.3		0.5	0		0	3.38	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
89, tree No. 23-91-6, Coarse strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	8 8	17	0 0	0	0 0	0	0 6	1	1 3	3	0 7	1	3 15	8	0 0	0	2 9	4	0 0	0	0 0	0	2.00	....
1913	43 7	201	30 11	164	6 3	21	1 2	3	2 8	7	0 7	1	0 14	2	0 8	1	0 8	1	0 10	1	0 0	0	1.33	....
1914	108 5	328	27 2	105	26 14	86	12 6	36	19 8	51	10 6	24	10 9	23	0 0	0	0 6	1	1 2	2	0 0	0	1.00	....
1915	42 8	94	0 10	3	1 14	6	3 4	9	6 1	16	7 9	17	9 1	18	7 6	14	4 8	8	1 7	2	0 12	1	4.67	....
Average	50.7	160	14.6	68	8.7	28	4.3	12	7.3	19	4.7	11	6.1	13	2.0	4	2.0	4	0.8	1	0.2	0.3	2.25	....
Cull fruits—																								
1912	27 1	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	....
1913	3 11	69	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
1914	1 9	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
1915	1 4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
Average	8.4	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.29	....
Total crop—																								
1912	41 12	74	0 0	0	0 0	0	0 6	1	1 9	4	0 7	1	6 3	12	0 9	1	4 15	8	0 10	1	0 0	0	1.37	0
1913	151 14	668	74 14	367	37 15	134	10 1	31	16 9	47	3 2	8	4 0	9	0 8	1	0 8	1	0 10	1	0 0	0	2.22	0
1914	122 3	379	31 12	123	31 14	101	14 10	42	19 15	52	10 6	24	10 9	23	0 0	0	0 6	1	1 2	2	0 0	0	2.78	38
1915	60 10	131	0 10	3	2 3	7	3 10	10	7 11	20	9 14	22	14 1	28	12 2	22	6 5	11	2 2	3	0 12	1	4.22	35
Average	94.1	313	26.8	123	18.0	61	7.2	21	11.4	31	6.0	14	8.3	18	3.3	6	3.0	5	1.1	2	0.2	0.3	2.61	18
90, tree No. 23-91-9, Coarse strain:																								
Orchard grade—																								
1912	38 9	82	0 0	0	1 1	3	5 9	15	6 13	16	7 8	16	11 10	22	2 15	5	3 1	5	0 0	0	0 0	0	0	....
1913	43 5	123	6 11	26	10 7	32	10 0	27	12 12	31	2 14	6	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	1.67	....
1914	79 6	247	39 10	137	29 6	84	9 0	23	1 6	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1915	26 6	56	0 0	0	0 0	0	1 15	5	6 2	15	6 1	13	6 2	12	6 2	11	0 0	0	0 0	0	0 0	0	3.00	....
Average	46.9	127	11.6	41	10.2	30	6.6	18	6.8	16	4.1	9	4.6	9	2.3	4	0.8	1	0	0	0	0	2.25	....

Standard grade—																														
1912	37	12	85	1	12	6	1	1	3	5	11	15	10	14	26	5	12	12	8	6	16	1	12	3	2	8	4	0	0	0	0	0	0	0	
1913	19	12	78	13	8	60	3	14	12	1	14	5	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1914	54	12	200	36	4	147	13	4	40	3	2	8	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	38	7	100	2	9	11	5	8	18	6	4	17	10	11	26	8	0	18	2	9	5	1	9	3	0	0	0	1	5	2	0	0	0	4.67	....
Average	37.7		116	13.5		56	5.9		18	4.2		11	5.9		14	3.6		8	2.7		5	0.8		2	0.6		1	0.3		.05	0		0	2.83	....
Cull fruits—																																			
1912	14	1	30																															0	....
1913	2	14	37																															2.00	....
1914	1	10	10																															1.67	....
1915	2	3	10																															4.33	....
Average	5.2		22																															2.00	....
Total crop—																																			
1912	90	6	197	1	12	6	2	2	6	11	4	30	17	11	42	13	4	28	20	0	38	4	11	8	5	9	9	0	0	0	0	0	0	.03	3
1913	65	15	238	20	3	86	14	5	44	11	14	32	12	12	31	3	6	7	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	2.56	4
1914	135	12	457	75	14	284	42	10	124	12	2	31	3	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.89	33
1915	67	0	166	2	9	11	5	8	18	8	3	22	16	13	41	14	1	31	8	11	17	7	11	14	0	0	0	1	5	2	0	0	0	4.00	11
Average	89.8		265	25.1		97	16.1		48	10.9		29	12.7		31	7.7		17	7.3		14	3.1		6	1.4		2	0.3		0.5	0		0	2.36	13
91, tree No. 23–89–4, Unproductive strain:																																			
Orchard grade—																																			
1912	68	13	165	2	6	9	7	1	21	9	5	25	24	8	58	16	0	34	8	6	16	0	9	1	0	10	1	0	0	0	0	0	0	2.33	....
1913	60	1	179	18	4	70	15	7	46	9	1	24	11	14	28	4	6	9	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2.00	....
1914	80	15	251	48	12	167	20	15	57	7	10	19	3	10	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.00	....
1915	18	5	40	0	0	0	0	10	2	1	12	5	4	3	10	3	3	7	2	14	6	4	7	8	0	10	1	0	10	1	0	0	0	5.00	....
Average	57.0		159	17.3		62	11.0		32	6.9		18	11.1		26	5.9		13	3.1		6	1.3		2	0.3		0.5	0.2		0.3	0		0	3.33	....
Standard grade—																																			
1912	57	8	146	9	5	33	7	7	22	12	14	34	9	0	21	10	0	20	7	11	14	0	0	0	1	3	2	0	0	0	0	0	0	2.00	....
1913	23	11	104	17	3	85	3	8	12	1	2	3	1	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33	....
1914	23	5	91	18	13	78	3	0	9	0	10	2	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
1915	6	2	15	0	4	1	0	10	2	1	2	3	1	11	4	0	14	2	1	0	2	0	9	1	0	0	0	0	0	0	0	0	0	4.67	....
Average	27.7		89	11.4		49	3.6		11	3.9		11	3.4		8	2.7		6	2.2		4	0.1		0.3	0.3		0.5	0		0	0		0	3.67	....
Cull fruits—																																			
1912	4	10	15																															1.67	....
1913	5	0	52																															4.00	....
1914	1	12	11																															1.67	....
1915	0	14	3																															4.33	....
Average	3.1		20																															2.92	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
91, tree No. 23-89-4, Unproductive strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	130 15	326	11 11	42	14 8	43	22 3	59	33 8	79	26 0	54	16 1	30	0 9	1	1 13	3	0 0	0	0 0	0	2.00	4
1913	88 12	335	35 7	155	18 15	58	10 3	27	13 12	32	4 6	9	1 1	2	0 0	0	0 0	0	0 0	0	0 0	0	3.11	4
1914	106 0	353	67 9	245	23 15	66	8 4	21	4 8	10	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.44	54
1915	25 5	58	0 4	1	1 4	4	2 14	8	5 14	14	4 1	9	3 14	8	5 0	9	0 10	1	0 10	1	0 0	0	4.67	5
Average	**87.8**	**268**	**28.7**	**111**	**14.7**	**43**	**10.9**	**29**	**14.4**	**34**	**8.6**	**18**	**5.3**	**10**	**1.4**	**3**	**0.6**	**1**	**0.2**	**0.3**	**0**	**0**	3.31	17
92, tree No. 23-77-18, Valencia strain:																								
Orchard grade—																								
1912	33 14	83	0 4	1	2 12	9	5 3	15	8 12	22	5 9	13	8 8	18	1 2	2	0 8	1	1 4	2	0 0	0	2.00	....
1913	68 5	216	12 1	48	26 8	86	12 3	36	14 15	40	2 2	5	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
1914	60 4	167	3 10	28	22 12	58	16 4	41	13 5	30	3 4	8	0 8	1	0 9	1	0 0	0	0 0	0	0 0	0	3.33	....
1915	65 10	160	0 0	0	4 8	14	3 14	11	29 10	75	15 12	36	8 4	17	3 10	7	0 0	0	0 0	0	0 0	0	2.67	....
Average	57.0	157	4.0	19	14.1	42	9.4	26	16.7	42	6.7	16	4.4	9	1.3	3	0.1	0.3	0.3	0.5	0	0	3.25	....
Standard grade—																								
1912	40 2	98	2 9	9	3 9	11	6 2	17	9 4	23	7 14	17	8 8	17	0 9	1	1 11	3	0 0	0	0 0	0	1.00	....
1913	25 3	101	14 6	65	7 9	26	2 8	8	0 12	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
1914	10 15	33	3 12	13	4 11	14	0 12	2	1 4	3	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1915	25 13	80	3 2	18	3 8	12	6 6	19	6 9	17	5 2	12	0 0	0	1 2	2	0 0	0	0 0	0	0 0	0	2.33	....
Average	25.5	78	6.0	26	4.8	16	3.9	11	4.5	11	3.4	8	2.1	4	0.4	1	0.4	1	0	0	0	0	2.42	....
Culls fruits—																								
1912	4 0	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	2 9	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	....
1914	1 4	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1915	0 11	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	....
Average	2.1	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.42	....

Total crop																														
1912	78	0	193	2	13	10	6	5	20	11	5	32	18	0	45	13	7	30	17	0	35	1	11	3	2	3	4	1	4	2	0	0	0	1.00	4
1913	96	1	353	26	7	113	34	1	112	14	11	44	15	11	42	2	2	5	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	3.22	6
1914	72	7	207	7	6	41	27	7	72	17	0	43	14	9	33	3	12	9	0	8	1	0	9	1	0	0	0	0	0	0	0	0	0	2.56	5
1915	92	2	243	3	2	18	8	0	26	10	4	30	36	3	92	20	14	48	8	4	17	4	12	9	0	0	0	0	0	0	0	0	0	2.67	10
Average	**84.**	**6**	**249**	**9.**	**9**	**46**	**19.**	**0**	**58**	**13.**	**3**	**37**	**21.**	**1**	**53**	**10.**	**1**	**23**	**6.**	**6**	**14**	**1.**	**8**	**3**	**0.**	**5**	**1**	**0.**	**3**	**0.**	**5**	**0**	**0**	**2.36**	**6**
93, tree No. 23-88-5, Rough strain:																																			
Orchard grade—																																			
1912	4	0	9	0	0	0	0	5	1	0	12	2	0	0	0	0	15	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....
1913	3	4	9	0	7	2	1	0	3	0	14	2	0	0	0	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.33	....
1914	19	11	67	13	6	50	4	5	12	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1915	13	4	29	0	0	0	0	0	0	0	5	1	3	8	9	1	13	4	5	6	11	1	2	2	1	2	2	0	0	0	0	0	0	3.67	....
Average	10.	1	29	3.	5	13	1.	4	4	1.	0	3	0.	9	2	0.	9	2	1.	8	4	0.	3	0.	5	0.	3	0.	5	0	0	0	0	2.50	....
Standard grade—																																			
1912	98	12	240																															1.00	....
1913	55	1	176																															1.00	....
1914	92	0	341	67	2	268	18	14	59	3	4	9	1	3	3	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
1915	41	5	104	0	13	4	4	7	14	8	14	25	9	11	24	13	14	30	1	14	4	1	12	3	0	0	0	0	0	0	0	0	0	2.33	....
Average	7.	18	215																															1.75	....
Cull fruits—																																			
1912	0	0	0																															[a]1.33	....
1913	1	8	11																															.67	....
1914	1	3	7																															2.33	....
1915	0	2	3																															[b]	....
Average	0.	7	5																															1.44	....
Total crop—																																			
1912	102	12	249																															1.11	21
1913	59	13	196																															1.38	31
1914	112	14	415	81	2	318	23	3	71	5	4	14	1	3	3	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	89
1915	54	11	136	0	13	4	4	7	14	9	3	26	13	3	33	15	11	34	7	4	15	2	14	5	1	2	2	0	0	0	0	0	0	3.00	44
Average	**82.**	**5**	**249**																															**1.97**	**46**
94, tree No. 23-89-5, Unproductive strain:																																			
Orchard grade—																																			
1912	36	3	86	1	7	5	3	9	11	3	9	11	10	13	26	6	14	15	5	2	10	1	2	2	2	6	4	1	5	2	0	0	0	1.00	....
1913	52	9	136	7	2	28	10	12	32	7	11	21	8	9	20	6	11	14	7	8	14	1	2	2	3	2	5	0	0	0	0	0	0	5.00	....
1914	100	15	313	56	1	194	24	14	70	16	12	42	3	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1915	19	0	42	0	0	0	0	5	1	2	0	6	3	12	9	5	9	12	4	9	9	2	13	5	0	0	0	0	0	0	0	0	0	5.00	....
Average	52.	1	144	16.	2	57	9.	9	29	7.	5	20	6.	6	16	4.	8	10	4.	3	8	1.	3	2	1.	4	2	0.	3	0.	5	0	0	3.83	....

[a] Result of the examination of three Rough-strain fruits.

[b] No count was made to determine the seed content of the fruits in this group.

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
94, tree No. 23-89-5, Unproductive strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	35 9	78	1 11	7	2 1	6	3 10	9	6 0	14	8 4	17	11 0	20	0 9	1	2 6	4	0 0	0	0 0	0	2.00	....
1913	12 0	45	6 8	32	1 0	3	0 14	2	2 9	6	0 7	1	0 10	1	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1914	13 14	51	8 0	34	4 4	13	0 12	2	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	31 6	85	1 14	8	5 0	16	8 10	24	8 9	21	6 13	15	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	6.67	....
Average	23.2	65	4.5	20	3.1	9	3.5	9	4.5	11	3.9	8	3.0	6	0.1	0.3	0.6	1	0	0	0	0	3.92	....
Cull fruits—																								
1912	16 1	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.67	....
1913	4 6	45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1914	1 4	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	....
1915	0 0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(*a*)	....
Average	5.4	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.92	....
Total crop—																								
1912	87 13	196	3 2	12	5 10	17	7 3	20	16 13	40	15 2	32	16 2	30	1 11	3	4 12	8	1 5	2	0 0	0	1.56	2
1913	68 15	226	13 10	60	11 12	35	8 9	23	11 2	26	7 2	15	8 2	15	1 2	2	3 2	5	0 0	0	0 0	0	3.11	6
1914	116 1	374	64 1	228	29 2	83	17 8	44	4 2	9	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	31
1915	50 6	127	1 14	8	5 5	17	10 10	30	12 5	27	12 6	10	5 1	10	2 13	5	0 0	0	0 0	0	0 0	0	5.83	12
Average	**80.8**	**231**	**20.7**	**77**	**13.0**	**38**	**11.0**	**29**	**11.1**	**26**	**8.7**	**14**	**7.3**	**14**	**1.4**	**3**	**2.0**	**3**	**0.3**	**0.5**	**0**	**0**	**3.15**	**13**
95, tree No. 23-89-6, Unproductive strain:																								
Orchard grade—																								
1912	31 6	62	0 8	1	0 6	1	0 12	2	4 14	12	5 4	11	10 14	21	1 0	2	3 2	5	4 10	7	0 0	0	1.33	....
1913	57 9	188	20 6	85	14 2	44	11 8	32	7 10	19	1 14	4	2 1	4	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1914	64 13	191	25 14	87	20 1	57	14 14	38	4 0	9	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.00	....
1915	22 13	61	0 8	2	2 15	9	6 2	18	10 8	26	1 12	4	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	7.33	....
Average	44.1	123	11.8	44	9.4	28	8.3	23	6.8	17	2.2	5	3.5	7	0.3	0.5	0.8	1	1.2	2	0	0	4.00	....

| | | |

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
96, tree No. 23-85-1, Small Yellow strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	57 5	175	10 6	39	15 0	45	9 9	25	5 13	14	3 5	7	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0	46
1913	71 0	398	57 14	291	4 13	16	1 12	5	1 2	3	0 0		0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.11	4
1914	48 11	154	27 9	101	10 10	28	4 12	11	4 1	8	0 9	1	0 0	0	0 10	1	0 0	0	0 0	0	0 0	0	1.67	59
1915	139 6	602	100 0	457	22 9	77	7 9	24	2 8	7	0 13	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.11	63
Average	**79.1**	**332**	**49.0**	**222**	**13.3**	**42**	**5.9**	**16**	**3.4**	**8**	**1.2**	**3**	**0.1**	**0.3**	**0.2**	**0.3**	**0**	**0**	**0**	**0**	**0**	**0**	**1.88**	**43**
97, tree No. 23-91-3, Unproductive strain:																								
Orchard grade—																								
1912	28 6	58	0 4	1	1 4	4	0 6	1	3 10	9	7 8	16	7 11	15	1 1	2	3 10	6	3 0	4	0 0	0	.33	....
1913	25 9	94	15 1	62	6 4	20	2 12	8	1 1	3	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1914	80 13	258	48 15	170	22 2	62	8 2	22	1 10	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1915	43 4	133	7 9	28	12 13	41	12 6	36	10 8	28	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
Average	44.5	136	18.0	65	10.6	32	5.9	17	4.2	11	2.0	4	1.9	4	0.3	0.5	0.9	2	0.8	1	0	0	2.25	....
Standard grade—																								
1912	35 13	77	0 12	3	2 0	6	2 12	7	7 13	18	6 12	14	12 4	23	1 0	2	2 8	4	0 0	0	0 0	0	.33	....
1913	19 4	93	17 1	86	1 8	5	0 11	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.67	....
1914	14 13	58	11 3	47	2 8	8	0 6	1	0 12	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.00	....
1915	37 12	129	13 8	54	16 11	54	6 12	19	0 6	1	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.67	....
Average	26.9	89	10.6	48	5.7	18	2.6	7	2.2	5	1.8	4	3.1	6	0.3	0.5	0.6	1	0	0	0	0	2.42	....
Cull fruits—																								
1912	4 8	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1913	4 12	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.33	....
1914	1 6	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.67	....
1915	1 6	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.33	....
Average	3.0	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.25	....

Total crop—																																
1912	68	11	146	1	0	4	3	4	10	3	2	8	11	7	27	14	4	30	19	15	38	2	1	4	6	2	10	3	0	4	0	0	0	.44	5
1913	49	9	265	32	2	148	7	12	25	3	7	10	1	1	3	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	4
1914	97	0	324	60	2	217	24	10	70	8	8	23	2	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.56	31
1915	82	6	272	21	1	82	29	8	95	19	2	55	10	14	29	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.22	22
Average	**74.4**		**252**	**28.6**		**113**	**16.3**		**50**	**8.5**		**24**	**6.4**		**16**	**3.8**		**8**	**5.0**		**10**	**0.5**		**1**	**1.5**		**3**	**0.8**		**1**	**0**		**0**	**2.31**	**16**
98, tree No. 23–98–1, Yellow strain:																																			
Orchard grade—																																			
1912	11	10	33	1	14	7	4	0	12	2	3	6	2	15	7	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	.67	....
1913	64	8	264	55	9	239	5	7	16	2	4	6	0	13	2	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....
1914	51	13	198	40	14	172	3	10	11	2	10	6	2	6	5	0	8	1		3	2	0	10	1	0	0	0	0	0	0	0	0	0	1.67	....
1915	17	15	52	3	7	13	5	4	16	4	2	11	2	14	7	1	4	3	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2.67	....
Average	36.5		137	25.4		108	4.6		14	2.8		7	2.3		5	0.5		1	0.7		1	0.2		0.3	0		0	0		0	0		0	1.50	....
Standard grade—																																			
1912	15	7	46	7	3	26	2	14	8	1	9	4	1	12	4	1	8	3	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	.33	....
1913	18	5	93	18	5	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	....
1914	19	9	98	17	1	91	2	2	6	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1915	60	6	208	22	6	93	21	3	70	12	9	35	3	3	8	0	8	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	.67	....
Average	28.4		111	16.2		76	6.5		21	3.5		10	1.3		3	0.5		1	0.3		0.5	0		0	0		0	0		0	0		0	1.00	....
Cull fruits—																																			
1912	16	8	47	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	0	....
1913	5	4	64	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	0	....
1914	3	12	46	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.67	....
1915	3	5	20	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.00	....
Average	7.2		44	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.42	....
Total crop—																																			
1912	43	9	126	9	1	33	6	14	20	3	12	10	4	11	11	1	8	3	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	.33	8
1913	88	1	421	73	14	332	5	7	16	2	4	6	0	13	2	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.43	216
1914	75	2	342	57	15	263	5	12	17	2	10	6	2	12	6	0	8	1	1	3	2	0	10	1	0	0	0	0	0	0	0	0	0	1.78	29
1915	81	10	280	25	13	106	26	7	86	26	11	46	6	1	15	1	12	4	1	9	3	0	0	0	0	0	0	0	0	0	0	0	0	1.44	105
Average	**72.1**		**292**	**41.7**		**184**	**11.1**		**35**	**8.8**		**17**	**3.6**		**9**	**1.0**		**2**	**1.0**		**2**	**0.2**		**0.3**	**0**		**0**	**0**		**0**	**0**		**0**	**1.00**	**90**
99, tree No. 23–89–11, Unproductive strain:																																			
Orchard grade—																																			
1912	29	14	90	9	13	37	7	12	23	4	1	11	5	6	13	2	6	5	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	.33	....
1913	36	6	164	31	6	149	3	8	11	1	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.33	....
1914	29	7	101	25	1	89	3	10	10	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	....
1915	44	7	135	14	11	52	9	12	30	10	10	30	8	7	21	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
Average	35.0		123	20.2		82	6.2		19	4.2		11	3.5		9	0.8		2	0.1		0.3	0		0	0		0	0		0	0		0	1.42	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
99, tree No. 23-89-11, Unproductive strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	10 3	32	5 13	20	2 6	7	1 8	4	0 0	0	0 0	0	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0.33	....
1913	21 10	117	20 4	112	1 0	4	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.66	....
1914	11 8	54	9 14	49	1 4	4	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.00	....
1915	38 12	154	24 4	111	9 3	30	1 8	4	2 0	5	1 13	4	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	.67	....
Average	20.5	89	15.1	73	3.5	11	0.9	3	0.5	1	0.5	1	0.1	0.3	0	0	0	0	0	0	0	0	1.25	....
Cull fruits—																								
1912	5 5	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1913	6 12	168	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	....
1914	4 12	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1915	4 13	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.67	....
Average	5.4	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.03	....
Total crop—																								
1912	45 6	143	15 10	57	10 2	30	5 9	15	5 6	13	2 6	5	1 0	2	0 0	0	0 0	0	0 0	0	0 0	0	.22	0
1913	64 12	449	51 10	261	4 8	15	1 14	5	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.78	124
1914	45 11	192	34 15	138	4 14	14	1 2	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	.89	5
1915	88 0	314	38 15	163	18 15	60	12 2	34	10 7	26	2 12	6	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	2.11	16
Average	61.0	275	35.3	155	9.6	30	5.2	14	4.0	10	1.2	3	0.3	0.5	0	0	0	0	0	0	0	0	1.25	36
100, tree No. 23-89-3, Unproductive strain:																								
Orchard grade—																								
1912	29 8	67	0 8	2	1 5	4	2 15	8	9 7	23	6 9	14	6 5	12	0 0	0	1 12	3	0 11	1	0 0	0	1.67	....
1913	39 4	161	32 10	141	5 6	17	0 12	2	0 9	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	6.00	....
1914	55 12	167	26 4	90	18 0	49	10 4	25	1 4	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.33	....
1915	15 9	40	0 8	2	2 5	7	4 10	13	4 8	11	0 14	2	1 0	2	1 12	3	0 0	0	0 0	0	0 0	0	5.33	....
Average	35.0	109	15.0	59	6.8	19	4.6	12	3.9	10	1.9	4	1.8	4	0.4	1	0.4	1	0.4	0.3	0	0	3.58	....

Standard grade—																																
1912	32	14	78	3	9	13	2	0	6	5	5	14	8	9	20	3	15	8	5	2	10	0	9	1	3	12	6	0	0	0	0	0	1.33	....
1913	15	5	65	11	10	61	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.50	....
1914	8	2	24	3	2	10	3	2	9	1	14	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.33	....
1915	23	6	69	0	8	2	7	8	26	8	9	24	5	3	13	1	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.67	....
Average	19.9		59	4.7		22	3.3		11	3.9		11	3.4		8	1.4		3	1.3		3	0.1		0.3	0.9		2	0		0	0		3.96	....
Cull fruits—																																
1912	7	9	26																													1.33	....
1913	4	14	63																													3.33	....
1914	1	7	10																													2.33	....
1915	0	10	6																													2.00	....
Average	3.6		26																													2.25	....
Total crop—																																
1912	69	15	171	4	1	15	3	5	10	8	4	22	18	1	43	10	8	22	11	7	22	0	9	1	5	8	9	0	11	1	0	0	1.44	4
1913	56	7	287	44	4	202	6	1	19	0	12	2	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.37	6
1914	65	5	201	29	6	100	21	2	50	12	2	30	1	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.67	16
1915	39	9	115	1	0	4	9	13	33	13	3	37	9	11	24	2	8	6	1	0	2	1	12	3	0	0	0	0	0	0	0	0	4.67	15
Average	57.8		194	19.7		80	10.1		30	8.6		23	7.4		18	3.3		7	3.1		6	0.6		1	1.4		2	0.4		0.3	0	0	3.26	10
101, tree No. 23-93-4, Unproductive strain:																																
Orchard grade—																																
1912	10	5	21	0	0	0	0	0	0	0	6	1	1	10	4	3	3	7	3	4	6	0	9	1	0	10	1	0	11	1	0	0	1.33	....
1913	42	13	145	17	10	67	15	9	50	5	15	18	3	5	9	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	....
1914	29	15	86	9	4	34	7	14	22	6	13	17	4	8	10	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.00	....
1915	49	13	136	1	6	5	10	2	32	12	1	34	17	14	46	6	6	15	2	0	4	0	0	0	0	0	0	0	0	0	0	0	4.00	....
Average	33.2		97	7.1		27	8.4		26	6.3		18	6.8		17	2.9		7	1.6		3	0.1		0.3	0.2		0.3	0.2		0.3	0	0	2.58	....
Standard grade—																																
1912	27	5	62	0	15	4	2	11	8	3	7	9	4	15	12	6	5	13	7	3	13	0	8	1	1	5	2	0	0	0	0	0	2.67	....
1913	12	12	57	11	3	52	1	4	4	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1914	17	12	54	5	10	23	5	4	16	1	4	3	1	12	4	2	6	5	1	8	3	0	0	0	0	0	0	0	0	0	0	0	3.67	....
1915	31	4	91	1	9	6	12	4	39	9	6	26	6	5	16	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.67	....
Average	22.3		66	4.8		21	5.4		17	3.6		10	3.3		8	2.6		6	2.2		4	0.1		0.3	0.3		0.5	0		0	0		4.00	....
Cull fruits—																																
1912	2	12	7																													.67	....
1913	2	8	43																													2.00	....
1914	1	3	7																													5.00	....
1915	1	15	4																													4.00	....
Average	2.1		15																													2.92	....

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																						Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
101, tree No. 23-93-4, Unproductive strain—Continued.																								
Total crop—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	40 6	90	0 15	4	2 11	8	3 13	10	6 9	16	9 8	20	10 7	19	1 1	2	1 15	3	0 11	1	0 0	0	1.56	• 1
1913	58 1	245	28 13	119	16 13	54	6 4	19	3 5	9	0 6	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	3.33	0
1914	48 14	147	14 14	57	13 2	38	8 1	20	6 4	14	3 14	8	1 8	3	0 0	0	0 0	0	0 0	0	0 0	0	3.56	30
1915	83 0	231	2 15	11	22 6	71	21 7	60	24 3	62	8 2	19	2 0	4	0 0	0	0 0	0	0 0	0	0 0	0	4.22	18
Average	**57.6**	**178**	**12.0**	**48**	**13.8**	**43**	**9.9**	**27**	**10.1**	**25**	**5.5**	**12**	**3.5**	**7**	**0.3**	**0.5**	**0.5**	**1**	**0.2**	**0.3**	**0**	**0**	**3.17**	**12**
102, tree No. 23-75-20, Unproductive strain:																								
Orchard grade—																								
1912	19 12	46	0 4	1	0 6	1	1 8	4	6 11	16	6 9	15	4 6	9	0 0	0	0 0	0	0 0	0	0 0	0	1.33	....
1913	39 1	131	14 14	57	17 12	56	5 5	15	1 2	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
1914	37 12	96	6 12	22	8 10	23	9 14	24	10 8	23	1 8	3	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	3.33	....
1915	33 0	91	3 7	12	5 7	16	7 14	22	13 2	34	3 2	7	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.33	....
Average	32.4	91	6.3	23	8.1	24	6.1	16	7.9	19	2.8	6	1.2	3	0	0	0	0	0	0	0	0	3.58	....
Standard grade—																								
1912	15 1	39	2 1	7	3 13	11	2 3	6	1 10	4	1 14	4	3 8	7	0 0	0	0 0	0	0 0	0	0 0	0	2.00	....
1913	20 9	90	17 7	80	2 7	8	0 11	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	5.00	....
1914	9 2	27	3 1	11	2 0	6	0 6	1	2 13	7	0 14	2	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.67	....
1915	13 12	44	2 1	9	4 15	7	3 2	9	2 6	6	1 4	3	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	4.33	....
Average	14.6	50	6.2	27	3.3	8	1.6	5	1.7	4	1.0	2	0.9	2	0	0	0	0	0	0	0	0	3.25	....
Cull fruits—																								
1912	5 4	15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.00	....
1913	3 4	40	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.00	....
1914	1 4	11	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.00	....
1915	11 8	10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6.33	....
Average	5.3	19	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.83	....

Total crop—																														
1912	40	1	100	2	5	8	4	3	12	3	11	10	8	5	20	8	7	19	7	14	16	0	0	0	0	0	0	0	0	0	2.00	0
1913	62	14	261	32	5	137	20	3	64	6	0	17	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.50	12
1914	48	2	134	9	13	33	10	10	29	10	4	25	13	5	30	2	6	5	0	8	1	0	0	0	0	0	0	0	0	0	2.00	13
1915	58	4	145	5	8	21	10	6	33	11	0	31	15	8	40	4	6	10	0	0	0	0	0	0	0	0	0	0	0	0	5.33	27
Average	**52.3**		**160**	**12.5**		**50**	**11.3**		**35**	**7.7**		**21**	**9.6**		**23**	**3.8**		**9**	**2.1**		**4**	**0**		**0**	**0**		**0**	**0**		**0**	**0**		**0**	**3.52**	**13**
103, tree No. 27–84–12, Smooth strain:																														
Orchard grade—																														
1912	40	10	96	2	15	10	5	11	17	6	0	16	8	4	20	5	4	11	7	9	14	1	13	3	3	2	5	0	0	0	0	0	0	0	0	....
1913	9	6	30	4	2	16	1	15	6	1	6	4	0	14	2	0	8	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2.00	....
1914	31	2	98	19	5	65	8	11	25	2	12	7	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	....
1915	27	8	74	2	3	8	6	6	20	6	8	18	7	7	18	1	14	4	2	0	4	1	2	2	0	0	0	0	0	0	0	0	0	0	6.33	....
Average	27.2		75	7.1		25	5.7		17	4.2		11	4.2		11	1.4		4	2.5		5	0.7		1	0.8		1	0		0	0		0	3.33	....
Standard grade—																														
1912	2	4	6	0	9	2	0	12	2	0	0	0	0	6	1	0	0	0	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	.67	....
1913	5	0	27	4	8	25	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.50	....
1914	18	4	63	8	12	35	5	10	18	1	0	3	2	14	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.67	....
1915	4	4	14	1	2	5	1	9	5	1	2	3	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.67	....
Average	7.4		28	3.7		17	2.1		7	0.5		2	0.9		2	0		0	0.1		0.3	0		0	0		0	0		0	0		0	3.88	....
Cull fruits—																														
1912	9	9	34	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.67	....
1913	1	8	15	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	4.33	....
1914	0	15	3	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.67	....
1915	0	10	3	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	1.67	....
Average	3.2		14	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	.....		.....	2.34	....
Total crop—																														
1912	52	7	136	3	8	12	6	7	19	6	0	16	8	10	21	5	4	11	8	2	15	1	13	3	3	2	5	0	0	0	0	0	0	0	.78	34
1913	15	14	72	8	10	41	2	7	8	1	6	4	0	14	2	0	8	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3.00	2
1914	50	5	164	28	1	100	14	5	43	3	12	10	3	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.44	10
1915	32	6	91	3	5	13	7	15	25	7	10	21	7	14	19	1	14	4	2	0	2	1	2	2	0	0	0	0.	0	0	0	0	0	0	4.56	8
Average	**37.8**		**116**	**10.9**		**42**	**7.8**		**24**	**4.7**		**1.3**	**5.2**		**13**	**1.9**		**4**	**2.7**		**5**	**0.7**		**1**	**0.8**		**1**	**0**		**0**	**0**		**0**	**3.19**	**14**
104, tree No. 37–57–25, Barren strain:																														
Orchard grade—																														
1912	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	....
1913	0	8	1	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	....
1914	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(a)	....
1915	5	9	12	0	3	1	0	0	0	0	0	0	1	9	4	0	0	0	2	0	4	0	9	1	1	4	2	0	0	0	0	0	0	0	1.33	....
Average	1.6		4	0.1		0.3	0	0		0	0		0.5		1	0		0	0.6		1	0.1		0.3	0.4		0.5	0		0	0		0	.33	....

a No count was made to determine the seed content of the fruits in this group.

TABLE I.—*Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive*—Con.

Rank, tree number, strain, grade, and year.	Sizes.																				Average number of seeds per fruit.	Number of variable fruits.
	Total.		288 and smaller.		250		216		200		176		150		126		112		96		80 and larger.			
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.		
104, tree No. 37-57-25, Barren strain—Continued.																								
Standard grade—	*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*			
1912	4 13	9	0 0	0	0 0	0	0 6	1	0 0	0	0 8	1	2 2	4	0 9	1	1 4	2	0 0	0	0 0	0	1.00	....
1913	4 4	14	2 0	9	1 2	3	0 0	0	0 7	1	0 0	0	0 0	0	0 11	1	0 0	0	0 0	0	0 0	0	2.00	....
1914	1 9	4	0 0	0	0 0	0	0 12	2	0 6	1	0 7	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	1.00	....
1915	6 2	12	0 0	0	0 14	3	0 0	0	0 0	0	0 15	2	0 8	1	0 9	1	1 12	3	0 11	1	0 13	1	4.00	....
Average	4.2	10	0.5	2	0.5	2	0.3	1	0.2	0.5	0.5	1	0.7	1	0.5	1	0.8	1	0.2	0.3	0.2	0.3	2.00	....
Cull fruits—																								
1912	7 7	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.67	....
1913	0 8	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1914	0 4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
1915	1 9	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....
Average	2.4	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.17	....
Total crop—																								
1912	12 12	35	0 0	0	0 0	0	0 6	1	0 0	0	0 8	1	2 10	5	0 9	1	1 4	2	0 0	0	0 0	0	.67	25
1913	5 4	17	2 0	9	1 2	3	0 0	0	0 15	2	0 0	0	0 0	0	0 11	1	0 0	0	0 0	0	0 0	0	1.00	0
1914	1 13	5	0 0	0	0 0	0	0 12	2	0 6	1	0 7	1	0 0	0	0 0	0	6 0	0	0 0	0	0 0	0	.75	0
1915	13 4	31	0 3	1	0 14	3	0 0	0	1 9	4	0 15	2	2 8	5	1 2	2	3 0	5	0 11	1	0 13	1	1.78	9
Average	8.3	22	0.6	3	0.5	2	0.3	1	0.7	2	0.5	1	1.3	3	0.6	1	1.1	2	0.2	0.3	0.2	0.3	1.12	9
105, tree No. 37-58-26, Barren strain:																								
Orchard grade—																								
1912	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	(a)	....
1913	0 8	1	0 0	0	0 0	0	0 0	0	0 8	1	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0	....
1914	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	(a)	....
1915	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	0 0	0	(a)	....
Average	0.1	0.3	0	0	0	0	0	0	0.1	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	....

| | | |

In each succeeding year of these investigations, the workers became familiar with an increasing number of variable forms of fruits and recorded their occurrence as they were observed. This accounts for the general increase from year to year in the number of such fruits recorded. Because of this increase in the number of variable forms observed, the figures given here as the average annual production of such fruits are too low, especially for those trees which have borne a large number of such variable fruits. When securing performance records, late-bloom fruit and split fruit have been recorded, but such fruits have not been included with the variable fruits.

In expressing the average of weights in Table I, it was found impracticable to retain more than one decimal place. The more exact expression of ounces as a fractional part of a pound extends to four decimal places, but only one place has been retained. In expressing the averages for the number of fruits occurring in different groups, no decimal has been retained except when the average number is less than unity. Hence, it will be found that the totals of averages sometimes will vary slightly from the average of the totals of the corresponding number.

In recording the tree-performance data the fruits of the Cull grade are not assorted into sizes, and on this account the total figures for the weights and numbers of fruits of the various sizes represent only the commercial crops of the trees.

In determining the average number of seeds per fruit on the different trees counts are made when possible from a small, a medium, and a large fruit in each of the three grades. In this way a record is usually secured of the actual number of seeds in 9 fruits from each tree, and it is thought that this system gives a fairly accurate indication of the relative seediness of the fruits of the different trees. To determine the annual average number of seeds per fruit, the total number of seeds found is divided by the total number of fruits examined during the entire period. In the case of trees from which less than 9 fruits have been examined during any season the average obtained in this way gives equal weight to each fruit and is fairer and more accurate than to average the yearly averages.

In counting the variable fruits occurring on individual trees, the strain of each tree is considered the standard for that tree, and all deviations from it are considered as variable fruits. For example, on a tree of the Valencia strain all fruits other than those of the Valencia strain are considered to be variable for that tree, while on a tree of the Corrugated strain all fruits other than those of the Corrugated strain are counted as variable. With the trees of the Sporting strain, however, the fruit of the Valencia strain is considered to be normal, and all variable fruits are counted as off type for those trees. The

relatively large number of variable fruits recorded on a few of the Productive trees of the Valencia strain, such as those listed in ranks 1, 2, 6, 7, 10, etc., are almost entirely composed of those described briefly under the heading "Minor variations of fruits." Occasionally on one of these trees a small branch has been found bearing a few fruits of one of the major strains, but usually the variable fruits found on Productive trees of the Valencia strain are not of a character to lessen the commercial value of the crop.

The working out of methods of interpreting these individual-tree performance records and of applying the knowledge gained from their study is essential. It is a simple matter to choose between healthy trees of the same age grown under identical cultural conditions when they have such widely different records as those presented for the trees listed in ranks 2 and 88 in Table I. But to make a choice between similarly grown trees with such performance records as those listed in ranks 2 and 3 is quite a different problem. The average annual production of these two trees for the four years was practically identical, 178.2 pounds and 178 pounds, but the actual yields each year varied considerably. The tree listed in rank 2 bore a gradually increasing amount of fruit during the 4-year period, while the one recorded in rank 3 bore heavily the first year, produced a lighter crop the next season, and an increasingly heavy one each succeeding year. The large number of variable fruits occurring on the tree in rank 2 is partly explained by the presence in the tree of a limb which produces fruits of the Ribbed strain. Both these trees appear to be of relatively high commercial value as crop producers and as sources of desirable bud wood for use in nursery propagation or for top-working trees of undesirable strains, and before any intelligent choice could be made between the two it would be necessary to know their performance records for one or two years more.

The annual-production records by fruit sizes for these two trees for the year 1912 when compared with the records for the succeeding years show a great variation in the proportion of fruit of the various commercial sizes in the crops of the individual trees. This variation was not due to the quantity of fruit on the individual trees, for it is equally marked on both these trees, although there is a considerable difference in the weight and number of fruit borne by them that season. The general production of oranges of large sizes during some years is well recognized by citrus growers and is thought to be the result of seasonal climatic conditions. An inspection of the annual performance records of the other trees presented herewith lends weight to this theory, for it will be found that, without exception, all the trees produced a relatively small number of small-sized fruit during the season of 1912 in comparison with the season of 1913, irrespective of whether or not the total yield during that season was larger or smaller

than in 1913. The 1915 records of many of the trees show this same tendency in a lesser degree, indicated by a relative decrease in production of fruits of the very smallest sizes, even where, as was the case with the tree listed in rank 3, the total crop for that year was larger than during the previous year.

Table II shows the percentage of fruit of the first or Orchard grade produced by each tree and the proportion of variable fruits recorded from each during the 4-year period. These percentages are calculated from the records of actual yields shown in Table I, and they are an aid in interpreting those data and in judging the relative commercial value of the individual trees both from the standpoint of crop production and as sources of desirable bud wood.

TABLE II.—*Performance records of 105 Valencia orange trees, showing the percentages of fruits of Orchard grade and of variable fruits borne by each tree, 1912 to 1915, inclusive.*

Rank in Table I.	Percentage of fruits.		Rank in Table I.	Percentage of fruits.		Rank in Table I.	Percentage of fruits.	
	Orchard grade (by weight).	Variable (by number).		Orchard grade (by weight).	Variable (by number).		Orchard grade (by weight).	Variable (by number).
1	78.6	3.5	36	62.0	2.9	71	70.6	0.6
2	67.7	7.3	37	59.0	2.1	72	72.1	2.7
3	67.9	.5	38	72.0	.7	73	77.6	.2
4	68.9	.5	39	81.3	.5	74	62.0	6.1
5	74.4	1.3	40	29.2	42.8	75	78.8	3.8
6	68.4	9.2	41	17.3	25.0	76	23.9	38.0
7	77.8	5.3	42	62.8	12.1	77	18.8	38.1
8	76.8	.6	43	72.7	.3	78	14.8	26.4
9	80.2	.4	44	46.1	26.1	79	24.4	37.9
10	73.4	5.7	45	50.7	13.5	80	52.5	7.5
11	71.9	4.8	46	67.2	2.6	81	73.7	2.5
12	64.3	6.3	47	22.9	33.5	82	79.8	3.9
13	77.6	.8	48	68.1	4.4	83	71.2	1.3
14	75.6	.9	49	60.5	4.8	84	68.1	6.5
15	75.2	.6	50	73.8	.8	85	72.4	1.1
16	69.5	.9	51	79.2	1.1	86	65.6	7.3
17	73.2	1.7	52	62.0	6.2	87	76.2	1.0
18	72.3	1.6	53	65.3	4.4	88	71.4	4.1
19	76.5	1.5	54	72.1	1.6	89	37.2	5.8
20	73.5	1.7	55	71.4	5.1	90	52.2	4.9
21	68.3	5.8	56	81.3	2.3	91	64.9	6.3
22	59.3	6.5	57	67.7	2.4	92	67.4	2.4
23	72.8	.7	58	71.9	5.2	93	12.2	18.5
24	70.8	4.0	59	73.4	5.3	94	64.5	5.6
25	70.8	7.3	60	57.7	7.2	95	55.1	7.8
26	65.5	4.2	61	59.3	4.2	96	45.6	13.0
27	63.3	9.1	62	65.8	.6	97	59.8	6.3
28	72.6	8.1	63	70.2	3.6	98	50.6	30.8
29	63.8	5.0	64	72.3	.5	99	57.4	13.1
30	61.0	6.4	65	67.2	7.9	100	60.6	5.2
31	73.3	.8	66	76.5	2.4	101	57.6	6.7
32	75.3	1.0	67	39.5	67.8	102	62.0	8.1
33	77.5	2.0	68	82.6	.3	103	72.0	12.1
34	70.2	4.5	69	67.7	7.2	104	19.3	40.9
35	79.8	1.2	70	77.4	6.6	105	.3	68.8

Table III shows in its first section (sec. A) the performance record of an orange tree of the Valencia strain for the season of 1915, as entered on the annual record form, and also the 4-year period performance record of the same tree. The detailed annual record is copied from the field notebook and shows the data therein recorded for each individual tree. The summary of this annual record is copied on the period form, as shown by the second

part of section A of the table. In order to economize space in publication, the detailed record form as shown here has been rearranged from that actually used in the investigations, but the summary records presented are in substantially the same form in which they were recorded. By means of this summary record form it is possible not only to compare the total crops for successive seasons, but also to study the relative amount of fruit in the different grades and sizes.

Sections B and C of Table III, showing both annual and 4-year period performance records for individual trees of the Corrugated and Barren strains, are given for comparison with section A of the same table. Considered as a series, these tabular statements show some of the great variations between trees of different strains, especially with respect to the amount of their total crops and the quality of the crops as indicated by the relative proportions of fruit of the different grades. These variations illustrate the relative value of these strains and are typical of the differences in production that exist in other strains of this variety. Considered as a record of individual trees, this table shows in detail the character of successive crops and their variations in quality and quantity.

TABLE III.—*Performance record of individual Valencia orange trees of different strains, showing the weight and number of the fruits of each grade and size and the variable fruits produced, detailed for the season of 1915, and also summarized for four seasons, 1912 to 1915, inclusive.*

[This summarized record illustrates the method of assembling the data of successive seasons for careful comparison and study. In practice, the variable fruits produced by the tree each season and the record of the number of seeds found in representative fruits are listed on the back of the forms. The weights are given in pounds and ounces, except that the fractional averages are expressed decimally in pounds.]

SECTION A.—TREE No. 23-85-10, VALENCIA STRAIN, LISTED IN RANK 32 IN TABLES I AND II.

DETAILED RECORD FOR THE SEASON OF 1915.[1]

Sizes of fruits.	Orchard grade.		Standard grade.		Total.		Cull fruits.		Grand total.	
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.
	Lbs. oz.		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*	
288 and smaller	1 10	6	10 10	41	12 4	47				
250	5 14	20	24 0	75	29 14	95				
216	18 12	57	13 2	37	31 14	94				
200	58 5	155	13 1	33	71 6	188				
176	25 1	59	2 10	6	27 11	65				
150	9 9	21	1 8	3	11 1	24				
126	0 8	1	0 0	0	0 8	1				
112	0 0	0	0 0	0	0 0	0				
96	0 0	0	0 0	0	0 0	0				
80 and larger	0 0	0	0 0	0	0 0	0				
Total	119 11	319	64 15	195	184 10	514	0 12	4	185 6	518
Seeds found:										
Small fruits		1		3		4		3		7
Medium fruits		4		7		11		1		12
Large fruits		5		7		12		1		13

[1] NOTES.—Total crop, 4½ boxes. Variable fruits: Australian, 1; Ridged, 2; Creased, 1; Raised section, 3; Abnormal section, 1; Split side, 1; Off bloom, 2.

TABLE III.—*Performance record of individual Valencia orange trees of different strains, showing the weight and number of the fruits of each grade and size and the variable fruits produced, detailed for the season of 1915, and also summarized for four seasons, 1912 to 1915, inclusive*—Continued.

SECTION A.—TREE NO. 23-85-10, VALENCIA STRAIN, LISTED IN RANK 32 IN TABLES I AND II—Continued.

SUMMARIZED RECORD FOR FOUR SEASONS.

Grades and sizes.	1912	1913	1914	1915	Total.	Average.
Weight of fruits:	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	
Orchard grade	91 5	96 9	111 4	119 11	418 13	104.7
Standard grade	19 1	19 1	16 11	64 15	119 12	29.9
Culls	7 0	7 9	2 8	0 12	17 13	4.5
Grand total	117 6	123 3	130 7	185 6	556 6	139.1
Sizes—						
288 and smaller	5 4	36 1	36 1	12 4	89 10	22.4
250	8 3	22 1	44 10	29 14	104 12	26.2
216	8 3	14 12	26 15	31 14	81 12	20.4
200	30 9	21 9	17 5	71 6	140 13	35.2
176	20 14	9 5	3 0	27 11	60 14	15.2
150	25 14	7 11	0 0	11 1	44 10	11.1
126	4 7	2 15	0 0	0 8	7 14	2.0
112	4 4	1 4	0 0	0 0	5 8	1.4
96	2 0	0 0	0 0	0 0	2 0	.5
80 and larger	0 12	0 0	0 0	0 0	0 12	.2
Total	110 6	115 10	127 15	184 10	538 9	134.6
Number of fruits:						
Orchard grade	204	295	302	319	1,120	280.0
Standard grade	46	77	53	195	371	92.8
Culls	17	78	13	4	112	28.0
Grand total	267	450	368	518	1,603	400.8
Sizes—						
288 and smaller	17	161	119	47	344	86.0
250	24	73	124	95	316	79.0
216	22	42	67	94	225	56.25
200	73	54	39	188	354	88.5
176	45	20	6	65	136	34.0
150	50	15	0	24	89	22.25
126	8	5	0	1	14	3.5
112	7	2	0	0	9	2.25
96	3	0	0	0	3	.75
80 and larger	1	0	0	0	1	.25
Total	250	372	355	514	1,491	372.75

SECTION B.—TREE NO. 23-85-7, CORRUGATED STRAIN, LISTED IN RANK 47 IN TABLES I AND II.

[In 1912 and 1913 the fruits of this tree were not assorted according to size.]

DETAILED RECORD FOR THE SEASON OF 1915.[1]

Sizes of fruits.	Orchard grade.		Standard grade.		Total.		Cull fruits.		Grand total.	
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.
	Lbs. oz.		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*	
288 and smaller	0 0	0	4 1	15	4 1	15				
250	2 0	7	8 10	26	10 10	33				
216	2 4	7	10 12	29	13 0	36				
200	15 3	39	14 6	36	29 9	75				
176	8 13	20	18 2	40	26 15	60				
150	8 14	18	4 15	10	13 13	28				
126	6 6	12	2 5	4	8 11	16				
112	0 0	0	0 11	1	0 11	1				
96	0 0	0	0 0	0	0 0	0				
80 and larger	0 0	0	0 0	0	0 0	0				
Total	43 8	103	63 14	161	107 6	264	0 10	3	108 0	267
Seeds found:										
Small fruits		7		2		9		0		9
Medium fruits		4		2		6		1		7
Large fruits		8		4		12		2		14

[1] NOTES.—Total crop, 2½ boxes. Corrugated fruits tend to be long and pear shaped, greenish yellow in color. Sports: Wrinkled, 1; Corrugated, 132; Ridged, 7; Creased, 4; Sunken section, 1; Yellow section, 1; Long, 2; Green section, 1; Ridged and Creased, 3; Granular, 11; Half Corrugated, Half Standard, 1.

TABLE III.—*Performance record of individual Valencia orange trees of different strains, showing the weight and number of the fruits of each grade and size and the variable fruits produced, detailed for the season of 1915, and also summarized for four seasons, 1912 to 1915, inclusive*—Continued.

SECTION B.—TREE No. 23-85-7, CORRUGATED STRAIN, LISTED IN RANK 47 IN TABLES I AND II—Continued.

SUMMARIZED RECORD FOR FOUR SEASONS.

Grades and sizes.	1912	1913	1914	1915	Total.	Average.
Weight of fruits:	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	
Orchard grade	18 1	31 1	20 14	43 8	113 8	28.4
Standard grade	119 9	76 2	114 4	63 14	373 13	93.5
Culls	2 13	3 4	2 7	0 10	9 2	2.3
Grand total	140 7	110 7	137 9	108 0	496 7	124.1
Sizes—						
288 and smaller			56 11	4 1		
250			40 11	10 10		
216			15 4	13 0		
200			16 9	29 9		
176			3 11	26 15		
150			2 4	13 13		
126			0 0	8 11		
112			0 0	0 11		
96			0 0	0 0		
80 and larger			0 0	0 0		
Total	137 10	107 3	135 2	107 6	477 5	121.8
Number of fruits:						
Orchard grade	39	89	61	103	292	73.0
Standard grade	266	216	339	161	982	245.5
Culls	9	36	12	3	60	15.0
Grand total	314	341	412	267	1,334	333.5
Sizes—						
288 and smaller			198	15		
250			115	33		
216			38	36		
200			38	75		
176			7	60		
150			4	28		
126			0	16		
112			0	1		
96			0	0		
80 and larger			0	0		
Total	305	305	400	264	1,274	318.5

SECTION C.—TREE No. 37-58-26, BARREN STRAIN, LISTED IN RANK 105 IN TABLES I AND II.

DETAILED RECORD FOR THE SEASON OF 1915.[1]

Sizes of fruits.	Orchard grade.		Standard grade.		Total.		Cull fruits.		Grand total.	
	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.
	Lbs. oz.		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*		*Lbs. oz.*	
288 and smaller	0 0	0	1 0	4	1 0	4				
250	0 0	0	0 0	0	0 0	0				
216	0 0	0	0 0	0	0 0	0				
200	0 0	0	0 6	1	0 6	1				
176	0 0	0	0 0	0	0 0	0				
150	0 0	0	0 8	1	0 8	1				
126	0 0	0	0 0	0	0 0	0				
112	0 0	0	0 0	0	0 0	0				
96	0 0	0	0 0	0	0 0	0				
80 and larger	0 0	0	0 0	0	0 0	0				
Total			1 14	6	1 14	6	0 15	4	2 13	10
Seeds found:										
Small fruits		(2)		2		2		1		3
Medium fruits		(2)		2		2		2		4
Large fruits		(2)		5		5		3		8

[1] No sports.

[2] Seeds in fruits of the Orchard grade were not counted.

TABLE III.—*Performance record of individual Valencia orange trees of different strains, showing the weight and number of the fruits of each grade and size and the variable fruits produced, detailed for the season of 1915 and also summarized for four seasons, 1912 to 1915, inclusive*—Continued.

SECTION C.—TREE No. 37-58-26, BARREN STRAIN, LISTED IN RANK 105 IN TABLES I AND II—Continued.

SUMMARIZED RECORD FOR FOUR SEASONS.

Grades and sizes.	1912	1913	1914	1915	Total.	Average.
Weight of fruits:	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	*Lbs. oz.*	
Orchard grade	0 0	0 8	0 0	0 0	0 8	0.13
Standard grade	2 1	1 7	0 0	1 14	5 6	1.34
Culls	7 13	0 2	0 0	0 15	8 14	2.22
Grand total	9 14	2 1	0 0	2 13	14 12	3.69
Sizes—						
288 and smaller	0 9	1 7	0 0	1 0	3 0	.75
250	0 0	0 0	0 0	0 0	0 0	.....
216	1 2	0 0	0 0	0 0	1 2	.28
200	0 0	0 8	0 0	0 6	0 14	.22
176	0 6	0 0	0 0	0 0	0 6	.09
150	0 0	0 0	0 0	0 8	0 8	.13
126	0 0	0 0	0 0	0 0	0 0	0
112	0 0	0 0	0 0	0 0	0 0	0
96	0 0	0 0	0 0	0 0	0 0	0
80 and larger	0 0	0 0	0 0	0 0	0 0	0
Total	2 1	1 15	0 0	1 14	5 14	1.47
Number of fruits:						
Orchard grade	0	1	0	0	1	.3
Standard grade	6	6	0	6	18	4.5
Culls	40	2	0	4	46	11.5
Grand total	46	9	0	10	65	16.3
Sizes—						
288 and smaller	2	6	0	4	12	3
250	0	0	0	0	.....	.....
216	3	0	0	0	3	.75
200	0	1	0	1	2	.5
176	1	0	0	0	1	.25
150	0	0	0	1	1	.25
126	0	0	0	0	0	0
112	0	0	0	0	0	0
96	0	0	0	0	0	0
80 and larger	0	0	0	0	0	0
Total	6	7	0	6	19	4.75

A comparison of the records of the trees listed in ranks 45, 51, and 54 of Tables I and II will bring out further the variations in production that may occur within a strain as that term is here employed. These three trees produced practically the same average yields for the 4-year period, but their crops for each year have varied considerably and in very different ratios.

The tree listed in rank 45 is representative of a small class which shows a gradual decrease in production each year. This is, of course, an undesirable condition, and in commercial practice such trees should be top-worked as soon as their production falls below the point of profitableness. The tree listed in rank 51 is representative of the most desirable group of any commercially valuable strain, namely, that one in which the crop production is gradually increased from year to year. The trees recorded in ranks 2, 5, 9, 16, 17, 21, 27, and 37

are also typical of this group, and many others in the list are classified with these, though they are not as representative as those mentioned. The tree listed in rank 54 is typical of the group commonly called alternate bearers or biennial bearers; that is, a season of normal or high

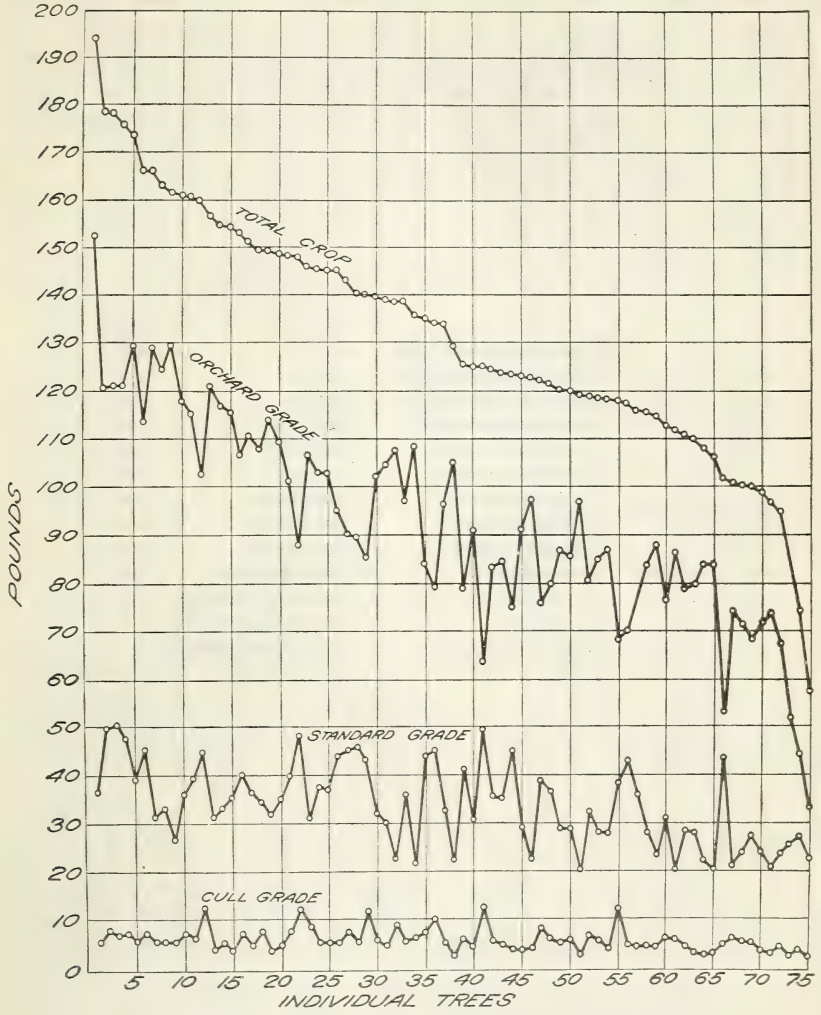


FIG. 1.—Diagram showing the average annual production of the 75 individual trees of the Valencia strain in the investigational performance-record plat for the 4-year period, 1912 to 1915, inclusive. The trees are here ranked in the order of their average total crop, expressed in pounds. The weight of the fruit of the three commercial grades is also shown for each tree.

production is followed by a small crop the next year, with the return of a normal crop the succeeding season. Usually these trees show a general increase in production during a period of years. This tree (rank 54) produced its small crops in the even years. The tree listed in rank 35 is also of this alternate-bearing character but bears its small

crops in the odd years. This group of trees may not be unprofitable to the grower, but they are not as desirable as those with a regular bearing habit.

The variation in the crop production of the individual trees of the Valencia strain in the performance-record plat is shown graphically in figure 1. The average annual crops of these 75 trees, which are planted in a single orchard block, vary from 57½ pounds to 193¾ pounds, but 64 of them, or 85 per cent of the total number, averaged between 100 and 160 pounds annually. This diagram also shows the variations in the amount of Orchard, Standard, and Cull grade fruit borne by trees producing practically the same total crops.

Section A of Table IV shows the average annual crop of all the Valencia orange trees occurring in the investigational performance-record plat in groups of strains and of select trees within some of these

% ORCHARD GRADE
% STANDARD GRADE
% CULL GRADE
2 SMOOTH STRAIN 80.0 15.6 4.4
10 HIGHEST PRODUCING (ALL VALENCIA STRAIN) 73.3 23.1 3.6
75 VALENCIA STRAIN 70.4 25.4 4.2
10 LOWEST PRODUCING VALENCIA STRAIN 67.5 28.4 4.1
8 UNPRODUCTIVE STRAIN 64.8 29.5 5.7
3 SPORTING STRAIN 63.2 30.6 6.2
10 LOWEST PRODUCING (IRRESPECTIVE OF STRAIN) 55.8 36.1 8.1
3 COARSE STRAIN 53.2 40.5 6.3
1 YELLOW STRAIN 50.6 39.4 10.0
1 SMALL YELLOW STRAIN 45.7 46.5 7.8
1 LONG STRAIN 33.4 62.1 4.5
2 ROUGH STRAIN 28.0 70.3 1.7
7 CORRUGATED STRAIN 21.8 77.0 1.2
2 BARREN STRAIN 14.8 46.4 38.8

FIG. 2.—Diagram showing the percentages of fruit of the different commercial grades in the average annual production of the trees of the various strains found in the investigational performance-record plat of Valencia oranges for the 4-year period, 1912 to 1915, inclusive. The strains are listed in the order of their relative production by weight of fruit of the Orchard grade.

strains. The groups are arranged according to the weight of the average annual crop of each individual tree. The presence of Barren-strain trees will probably be a surprise to many Valencia growers. Trees of this strain and other low-producing strains when noticed in the orchards have usually been considered to be biennial bearers, in their off year. Records, such as those here reported, show that in some instances, at least, this theory is baseless. Here are shown the records of two trees of the Barren strain which have borne practically uniform crops for the past four years, with an average yearly crop of 6 pounds per tree, only 3.7 pounds being commercial fruit suitable for the market. It will be seen that nearly all the other sporting strains produced much less than is ordinarily expected from the average orchard tree and all of them averaged less than was produced by the trees of the Valencia strain.

Section B of Table IV shows the groups of trees of the different strains ranked according to the average annual crop of first, or Orchard, grade fruit produced. This change alters the relative position of several of the strains, but the Valencia strain is still at the head and the Barren strain at the foot of the list.

TABLE IV.—*Average annual crop of groups of trees of the variable strains of the Valencia orange occurring in the investigational performance-record plat, showing production by commercial grades for the 4-year period, 1912 to 1915, inclusive.*

Trees.		Average annual production per tree (pounds).			
Description.	Number.	Orchard grade.	Standard grade.	Cull fruits.	Total crop.
Section A.—Ranked according to their average total crops:					
Highest producing Valencia strain	10	125.9	39.6	6.1	171.6
Valencia strain	75	92.8	33.6	5.5	131.8
Sporting strain	3	80.7	39.0	7.9	127.6
Corrugated strain	7	24.7	87.4	1.4	113.5
Long strain	1	66.5	35.8	4.9	107.2
Coarse strain	3	53.1	40.4	6.2	99.7
Rough strain	2	27.6	69.2	1.7	98.5
Lowest producing Valencia strain	10	61.6	25.8	3.7	91.1
Small Yellow strain	1	36.1	36.8	6.2	79.1
Unproductive strain	8	50.0	22.8	4.4	77.2
Smooth strain	2	60.6	11.8	3.4	75.8
Yellow strain	1	36.5	28.4	7.2	72.1
Lowest producing trees	10	28.2	18.2	4.0	50.4
Barren strain	2	.9	2.8	2.3	6.0
General average		78.6	36.4	5.1	120
Section B.—Ranked according to the weight of fruit of Orchard grade produced:					
Highest producing Valencia strain	10	125.9	39.6	6.1	171.6
Valencia strain	75	92.8	33.6	5.5	131.8
Sporting strain	3	80.7	39.0	7.9	127.6
Long strain	1	66.5	35.8	4.9	107.2
Lowest producing Valencia strain	10	61.6	25.8	3.7	91.1
Smooth strain	2	60.6	11.8	3.4	75.8
Coarse strain	3	53.1	40.4	6.2	99.7
Unproductive strain	8	50.0	22.8	4.4	77.2
Yellow strain	1	36.5	28.4	7.2	72.1
Small Yellow strain	1	36.1	36.8	6.2	79.1
Lowest producing trees	10	28.2	18.2	4.0	50.4
Rough strain	2	27.6	69.2	1.7	98.5
Corrugated strain	7	24.7	87.4	1.4	113.5
Barren strain	2	.9	2.8	2.3	6.0
General average		78.6	36.4	5.1	120

It should be noted that the 10 highest producing trees of the Valencia strain are also the 10 highest producing trees in the plat, irrespective of strain. Table I shows that the highest producing tree of a strain other than the Valencia is twenty-eighth in rank.

Figure 2 shows graphically the percentages of Orchard, Standard, and Cull grade fruits in the average annual production of groups of trees of the various strains represented in the investigational performance-record plat. This diagram can best be interpreted by comparing it with Table IV, which shows the actual average crops of these groups of trees of the different strains. Although the trees of the Smooth strain head the list in figure 2, their actual average production was only 60.6 pounds of Orchard-grade fruit, with a total production of 75.8 pounds, so that in value to the grower they are

far below the trees of the Valencia strain. The trees of the Barren strain are again found at the foot of the list.

The percentages of the two grades making up the commercial crops in the various strains are shown graphically in figure 3. These data are based on the weight of the average production per tree for the 4-year period, and the strains are arranged in the order of the percentage of first, or Orchard, grade fruit produced. This diagram, like figure 2, can be interpreted rightly only by comparison with the data of actual yield as shown in Table IV.

Figure 4 shows the average weight of fruit of the different commercial sizes and grades which was produced during the 4-year period on the 10 highest producing trees in the investigational performance-record plat in comparison with the corresponding yields of the 10

PER CENT ORCHARD GRADE
PER CENT STANDARD GRADE
83.7 2 SMOOTH STRAIN 16.3
76.1 10 HIGHEST PRODUCING (ALL VALENCIA STRAIN) 23.9
73.4 75 VALENCIA STRAIN 26.6
70.4 10 LOWEST PRODUCING VALENCIA STRAIN 29.6
68.7 8 UNPRODUCTIVE STRAIN 31.3
67.4 3 SPORTING STRAIN 32.6
65.0 1 LONG STRAIN 35.0
60.8 10 LOWEST PRODUCING (IRRESPECTIVE OF STRAIN) 39.2
56.8 3 COARSE STRAIN 43.2
56.2 1 YELLOW STRAIN 43.8
49.6 1 SMALL YELLOW STRAIN 50.4
28.5 2 ROUGH STRAIN 71.5
24.0 2 BARREN STRAIN 76.0
22.0 7 CORRUGATED STRAIN 78.0

FIG. 3.—Diagram showing the percentages of Orchard and Standard grade fruit per tree in the average annual commercial crops of the trees of the various strains found in the investigational performance-record plat of Valencia oranges for the 4-year period, 1912 to 1915, inclusive. The strains are listed according to their proportion by weight of Orchard (or first) grade fruit.

lowest producing trees of the plat. This diagram illustrates graphically the fact that the heaviest bearing trees produce a larger proportion of the most desirable and valuable sizes of fruits than the lowest producing trees. The most productive trees also bear the largest proportion of fruit of first, or Orchard, grade, so that they are more profitable from the standpoint of quality and size of fruits, in addition to being high producers. On the other hand, the lowest producing trees bear a much larger proportion of extremely small fruits and fruits of the Standard (or second) grade.

Figure 5 is similar to figure 4, in that it shows the percentages of fruit of the different commercial sizes which were produced by the 10 highest and the 10 lowest yielding trees in the performance-record plat, but in this diagram the figures are based on the number

of fruits produced instead of on the weight of the fruits. This serves to emphasize the small-sized fruits and the Cull grades.

Figure 6, like figures 4 and 5, shows the average number of fruits produced by the 10 highest and 10 lowest yielding trees, but the yields of fruit of the different sizes are expressed as percentages of a packed box. The highest producing trees bore an annual average of 2.15 packed boxes per tree, as compared with a yield of 0.63 of a packed box from the lowest yielding trees. This difference indicates something of the value and desirability of growing only trees of the best strain in commercial orchards. These yields are very low, especially those from the best trees, but it should be remembered in this con-

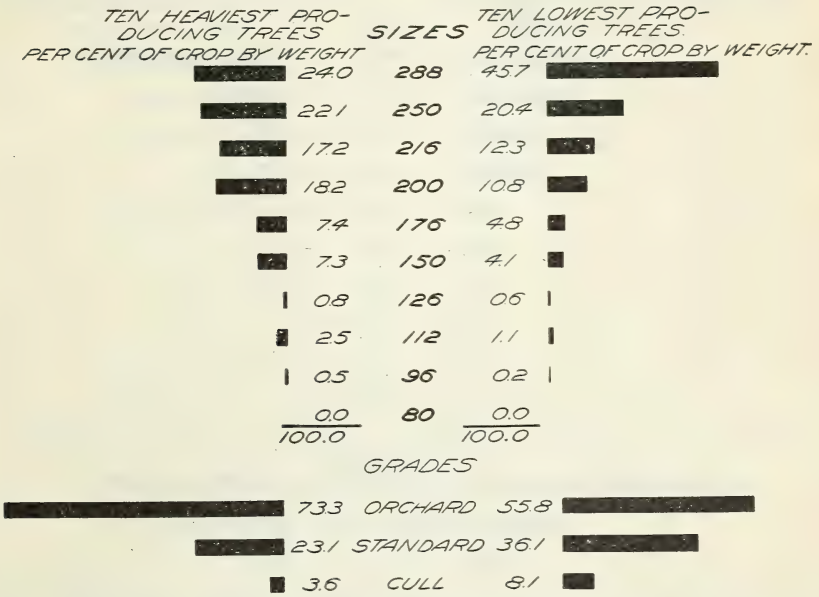


FIG. 4.—Diagram showing the variations in the commercial sizes and grades of fruit on the 10 heaviest producing trees in comparison with the 10 lowest producing trees in the experimental performance-record plat of Valencia oranges. The percentages are based on the weight of the average crop per tree for a 4-year period. Figure 5 shows similar variations based on the number of fruits produced.

nection that several of the conditions which were considered essential for the location of the performance-record plats were prohibitive to the production of large crops. It is also interesting and important, especially from the standpoint of dollars and cents, to note that the highest producing trees bore 33 per cent of their crop in the most desirable and valuable sizes, while the low-yielding trees had only 18.7 per cent of their crop in these sizes. Figuring the productions here shown on the acre basis at the rate of planting in the performance-record plat, it is found that the high producing trees bore 172 packed boxes as compared with 50.4 packed boxes per acre from the lowest producing trees. The values, delivered at the packing house, of

these calculated crops figured on the basis of the actual prices obtained during the investigational period, and considering the variations in grades and sizes produced per acre by the two groups of trees, would be $311.32 and $84.17, respectively.

This correlation of heavy yield and superior commercial grade in the production of trees of the Valencia strain is very important from the standpoint of the stabilization of the variety through bud selection based on performance records. Figures 4, 5, and 6 indicate that the propagation from the highest yielding trees means not only heavier production, but also improvement in the grade and size of fruit.

FIG. 5.—Diagram showing the variations in the commercial sizes and grades of fruit on the 10 heaviest producing trees in comparison with the 10 lowest producing ones in the investigational performance-record plat of Valencia oranges. The percentages are calculated from the number of fruits in the average crop per tree for a 4-year period. Figure 4 shows similar variations based on the weight of the crop.

Figure 7 shows graphically the relative number of variable fruits in the total crops of trees of the various strains of the Valencia orange occurring in the investigational performance-record plat. The diagram illustrates very well the comparative freedom from such fruits which characterizes the trees of the Valencia strain of this variety and the larger proportions of variable fruits which occur in the poorer and more undesirable strains. It is interesting to note that on the trees of the Barren strain, in addition to the almost entire lack of a crop of any sort, 84.3 per cent of what was produced was made up of sporting fruits. In counting the variable fruits on a tree only those showing some variation from the general type of the fruits

produced by that tree were recorded. For instance, in the case of the trees of the Valencia strain all other than Valencia fruits were considered as variable ones, while for the trees of the Corrugated strain all other than Corrugated fruits were recorded. For the trees of the Sporting strain all other than typical Valencia-strain fruits were counted as variable ones.

The comparative freedom of many trees of the Valencia strain from variable fruits indicates the possibility of controlling bud variability in propagation in commercial orchards by bud selection based on performance records.

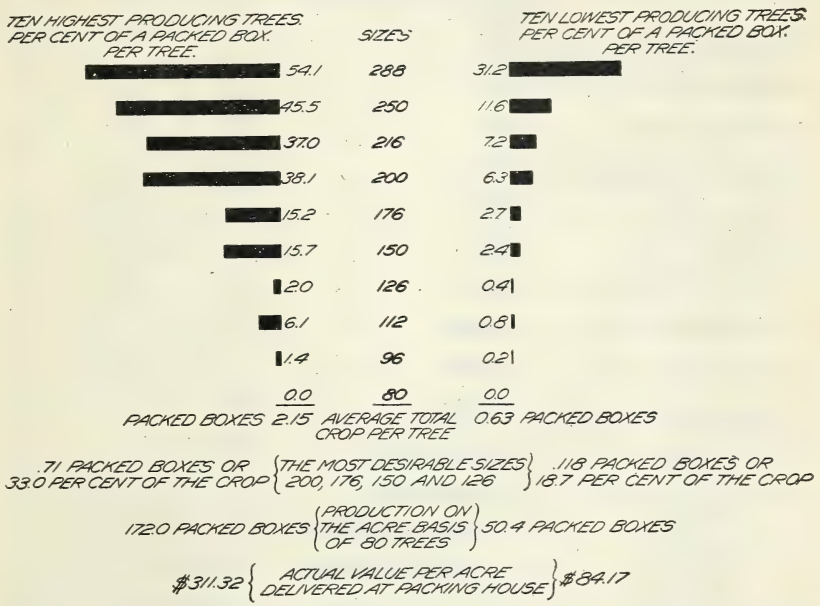

TEN HIGHEST PRODUCING TREES. PER CENT OF A PACKED BOX. PER TREE.
SIZES
TEN LOWEST PRODUCING TREES. PER CENT OF A PACKED BOX. PER TREE.
54.1 288 31.2
45.5 250 11.6
37.0 216 7.2
38.1 200 6.3
15.2 176 2.7
15.7 150 2.4
2.0 126 0.4
6.1 112 0.8
1.4 96 0.2
0.0 80 0.0
PACKED BOXES 2.15 AVERAGE TOTAL CROP PER TREE 0.63 PACKED BOXES
.71 PACKED BOXES OR 33.0 PER CENT OF THE CROP
THE MOST DESIRABLE SIZES 200, 176, 150 AND 126
.118 PACKED BOXES OR 18.7 PER CENT OF THE CROP
172.0 PACKED BOXES
PRODUCTION ON THE ACRE BASIS OF 80 TREES
50.4 PACKED BOXES
$311.32
ACTUAL VALUE PER ACRE DELIVERED AT PACKING HOUSE
$84.17

FIG. 6.—Diagram showing the average number of fruits of the various commercial sizes produced annually during the 4-year period, 1912 to 1915, inclusive, by the 10 highest yielding and the 10 lowest yielding trees in the investigational performance-record plat of Valencia oranges. This production is expressed as percentages of a packed box calculated from the average number of fruits of the different sizes. The percentage of most desirable sizes is also stated, and the production on the acre basis is shown and its value calculated from the actual returns during the four years.

The average number of seeds per fruit produced by trees of some of the various strains of the Valencia orange is shown in figure 8. This diagram, in comparison with Table IV, shows a very close correlation between the number of seeds per fruit and the comparative amount of Orchard-grade fruit produced by trees of the different strains here listed. It appears that the presence of three or four seeds per fruit is characteristic of the Valencia strain.

Many other interesting characteristics of the various strains of the Valencia orange have been studied during the progress of these investigations, but those presented here are among the most marked

and important. All the data show that it is very important to isolate the strains of this variety and, for commercial purposes, to propagate only the best of them.

COMPARATIVE VALUE OF THE STRAINS.

Any statement of the comparative value of the various strains of the Valencia orange must be understood as applying only to present conditions. What the future of some of these strains may be under different cultural and market conditions no one can now say.

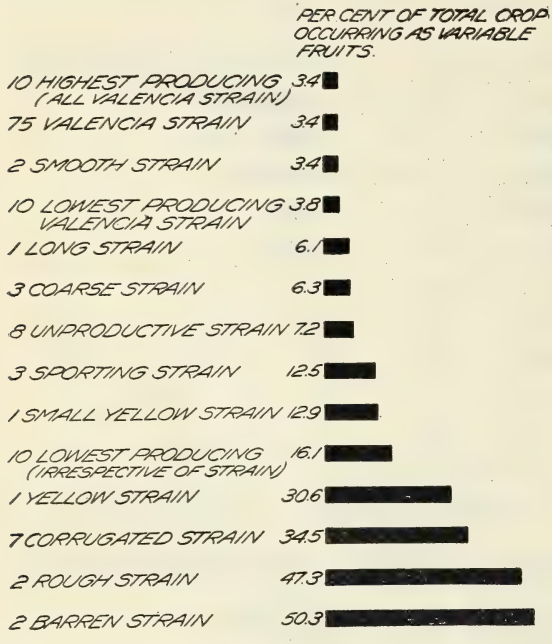

PER CENT OF TOTAL CROP OCCURRING AS VARIABLE FRUITS.
10 HIGHEST PRODUCING (ALL VALENCIA STRAIN) 3.4
75 VALENCIA STRAIN 3.4
2 SMOOTH STRAIN 3.4
10 LOWEST PRODUCING VALENCIA STRAIN 3.8
1 LONG STRAIN 6.1
3 COARSE STRAIN 6.3
8 UNPRODUCTIVE STRAIN 7.2
3 SPORTING STRAIN 12.5
1 SMALL YELLOW STRAIN 12.9
10 LOWEST PRODUCING (IRRESPECTIVE OF STRAIN) 16.1
1 YELLOW STRAIN 30.6
7 CORRUGATED STRAIN 34.5
2 ROUGH STRAIN 47.3
2 BARREN STRAIN 50.3

FIG. 7.—Diagram showing the relative number of variable fruits found in the average total crops of trees of different strains of the Valencia orange in the investigational performance-record plat during the 4-year period, 1912 to 1915, inclusive.

Under existing conditions, only one of the twelve strains here described is of commercial value, though three others are of possible value to orange growers. In some cases the inferior strains are not only unproductive, but the fruits produced by them are poor in quality or unattractive in appearance.

From a commercial standpoint the Valencia strain is the most valuable found so far in these investigations. Some others, especially the Smooth, Yellow, and Navel strains or selections from them, may prove desirable additions to the present varieties of summer-ripening oranges. After the value of any new strain has been determined, considerable time is required for its introduction and trial in sections having different climatic and soil conditions. This work of necessity is of a careful, experimental nature, requiring several years to obtain reliable results.

The remaining strains described in this bulletin are undesirable in nearly every respect, as will be readily apparent from the records and descriptions of them already presented. Since commercial orange growing is conducted for the profit to be obtained thereby, the further propagation of these inferior strains or their culture in

established plantings should be discouraged. For these reasons it seems wise for the present to concentrate effort upon the stabilization of the Valencia strain by means of bud selection based on performance records and intimate knowledge of the individual tree.

THE UNINTENTIONAL PROPAGATION OF UNDESIRABLE STRAINS.

The prevailing method of securing bud wood of the Valencia variety has been to cut it either from bearing trees in established orchards, or, to a limited extent, from young nursery or nonbearing trees. Where the buds have been cut from bearing trees little or, usually, no selection of parent trees has been practiced.

Bud variations have been propagated unintentionally by nurserymen because the existence and importance of such variations have been unknown until very recently. The occurrence of individual trees in the performance-record plats bearing mainly fruit identical with the fruit variations occurring individually or as limb sports in other trees and the existence of similar limb sports in the parent trees from which the performance-record trees were propagated are evidences of the propagation of these diverse strains from bud variations. From the fact that the most variable trees are usually the most vigorous in vegetative growth and that the most vigorous-growing, nonfruit-bearing wood has been usually selected for propagation, the proportion of trees of the variable strains in established orchards has been increasing continually in the later plantings as compared with the early propagations of this variety. Because of the lack of knowledge in the past of the existence of bud variations, no one can

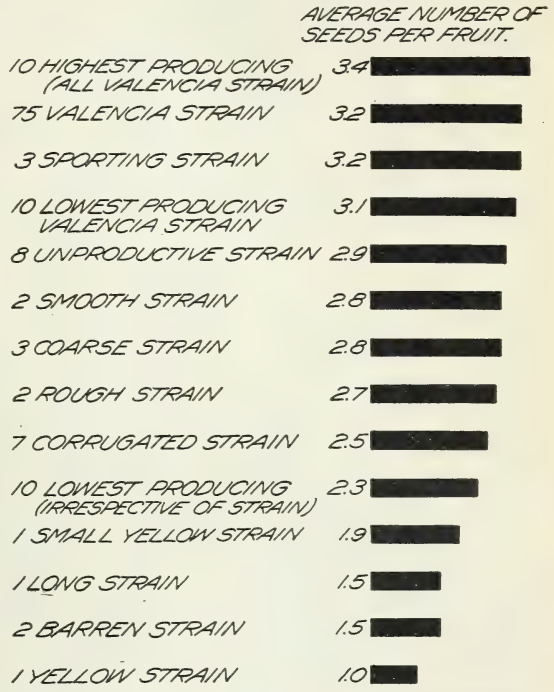

AVERAGE NUMBER OF SEEDS PER FRUIT.
10 HIGHEST PRODUCING (ALL VALENCIA STRAIN) 3.4
75 VALENCIA STRAIN 3.2
3 SPORTING STRAIN 3.2
10 LOWEST PRODUCING VALENCIA STRAIN 3.1
8 UNPRODUCTIVE STRAIN 2.9
2 SMOOTH STRAIN 2.8
3 COARSE STRAIN 2.8
2 ROUGH STRAIN 2.7
7 CORRUGATED STRAIN 2.5
10 LOWEST PRODUCING (IRRESPECTIVE OF STRAIN) 2.3
1 SMALL YELLOW STRAIN 1.9
1 LONG STRAIN 1.5
2 BARREN STRAIN 1.5
1 YELLOW STRAIN 1.0

FIG. 8.—Diagram showing the average number of seeds found in fruits from the trees of the various strains of the Valencia orange in the investigational performance-record plat during the 4-year period, 1912 to 1915, inclusive. A large, a medium, and a small fruit from each of the three grades, that is, nine fruits from each tree, were cut each season and the seeds from each fruit carefully counted.

be blamed for the unfortunate and undesirable propagations of poor strains which have been so generally made. However, now that bud variability in trees of this variety has been established definitely, any propagator who does not carefully select his bud wood from trees of the best strain on the basis of their performance records will not be able to excuse the poor results of his propagations on the ground of the lack of information on this subject.

THE ISOLATION OF STRAINS THROUGH BUD SELECTION.

In the beginning of these investigations fruit-bearing bud wood was selected from limb variations in trees of the Valencia and other strains and top-worked in bearing trees in order to get them into fruiting quickly. About 100 such propagations have come into bearing, and as far as can be judged from trees of their age they have in every instance reproduced the strains which were propagated.

Later, as opportunity has permitted, the bud variations have been propagated on nursery stocks. These progeny tests will require several years to secure reliable performance-record data, but in so far as such trees have fruited the results have confirmed those secured by top-working bearing trees.

Enough evidence has been secured in these investigations to warrant the assertion that all of the 12 strains described in this bulletin can be isolated through bud selection. It seems probable that other strains also can be isolated in the same manner.

This conclusion does not include the idea that bud variation within these strains can be entirely eliminated. On the contrary, the investigations have shown that variation will likely continue as long as the strains are propagated. What has been demonstrated is that variation can be controlled by bud selection to such an extent that the individuals of a strain can be brought to a condition of practical uniformity as regards crop production and other characteristics.

Bud selection should be based on definite knowledge of the individual tree, which can be secured most satisfactorily by means of performance records and careful study. A thorough investigation of most of the established Valencia orchards in the light of individual-tree records will reveal the necessity for greater care in selecting buds for use in propagation.

The bud wood found most satisfactory in these investigations is that bearing typical fruits of the strain desired and of the one or two periods of growth preceding the production of the fruits. One or more fruits of the desired strain should be cut off with each bud stick as an indication or label showing the probable character of fruit that will be produced by the buds immediately back of the fruit. Figure 9 shows a bud stick cut in this manner with typical fruits of

the Valencia strain attached. When such bud wood is used, a larger number of desirable buds can be secured from heavy bearing

FIG. 9.—A Valencia orange bud stick of fruit-bearing wood cut with typical fruits of the Valencia strain attached. (About one-half natural size.)

trees than from less productive ones. When bud wood of this character was first recommended for use, nurserymen and propagators were almost unanimous in their objections to it on account of its

small size. Since that time this prejudice has gradually disappeared and thousands of buds from such wood have been used successfully in both experimental and commercial propagations.

If bud wood is desired at times when the fruits are unripe or when the bud wood is not in condition for use, it should be cut when the ripe fruits are available for inspection and stored in sterilized moss until needed.

The identification of a valuable strain is of vital commercial importance to the entire orange industry. The segregation of the inferior strains is of interest only from an experimental standpoint. The propagation of valuable strains will result not only in an increased production, but what is equally important, in a uniform production of crops of greater commercial value.

TOP-WORKING UNDESIRABLE TREES.

Healthy Valencia orange trees of inferior or undesirable strains can be successfully top-worked, using the kind of bud wood described in the preceding paragraphs. This bud wood can be used either as grafts or, as is the usual practice, for budding directly into some of the main limbs.

The selection of trees to be top-worked should be made before their fruits are picked. While trees of some inferior strains are easily recognized from their habits of growth or foliage characteristics, it is desirable wherever possible to base the selection of trees to be top-worked on their performance records and fruit characteristics. The selection of bud wood for top-working purposes should also be based on individual-tree performance records associated with an intimate knowledge of tree and fruit characteristics secured from careful observations in the orchards.

In top-working established trees, two or three of the main limbs should be selected for the foundation of the new heads. Two buds should be inserted in each of these limbs, from 12 to 24 inches above the fork of the trunk. After the buds have united with the older limbs, these limbs should be cut off about 6 inches above the point of insertion of the buds, and the cut surfaces covered with grafting wax or some pruning compound. The trunks and remaining portions of the limbs should be heavily whitewashed or otherwise protected, in order to prevent injuries from exposure. About a year later the stubs of the original limbs should be cut back close to the young buds, making the cuts oblique in order to facilitate their healing, and the cut surfaces should be again waxed or painted. In every case great care must be exercised in removing all sprouts from the trunk and old limbs in order to develop the new heads entirely from the inserted buds.

It is essential that the rebudded trees be inspected from time to time for the first year or two, in order that they may be cared for intelligently. The growth from the rebuds must be thinned occasionally, so that strong, open, and well-arranged tops will be secured. Insect enemies attacking the tender growth of the rebuds must be destroyed. Ten-year-old trees of inferior strains of the Valencia orange rebudded to the Valencia strain by the use of fruit-bearing bud wood usually will begin bearing in two or three years, reaching normal production in about four or five years.

As a result of these investigations, more than 5,000 undesirable Valencia orange trees in California orchards have been top-worked with buds selected from the most desirable trees in the investigational performance-record plats. The oldest tops grown from such buds are now more than four years old. So far not a single failure has been observed in transmitting the characteristics of the parent trees by means of the selected buds. Several thousand trees of undesirable strains of the Washington Navel orange and Marsh grapefruit also have been top-worked with selected buds of those varieties in the same manner during the past five years with equal success. This positive evidence as to the possibility of improving undesirable trees by top-working has resulted in the widespread adoption of this practice by California citrus growers.

SUMMARY.

In proportion to the area of the established Valencia orange orchards in California, the Valencia orange is being planted more extensively in that State than any other variety. It is now the leading summer-bearing orange variety grown in the State.

The object of these investigations is to discover methods of practice for the conservation and stabilization of the variety.

The plan of the investigation is a careful, detailed, and intimate study of the individual tree, the results of which are called individual-tree performance records.

The Valencia trees in these investigations were propagated from the variety originally introduced into California from Florida under the name of Hart (*Hart's Tardiff*).

In the performance-record plats considered in these investigations there are trees of 12 important strains and of many minor strains which have originated from bud mutations.

The frequent occurrence of bud variations in trees of this variety is of definite importance in the consideration of means for the improvement of the production of established orchards, the isolation of the best strains, and the control, as far as possible, of bud variation through bud selection based on performance records.

The most valuable strain of this variety is the Valencia. Some other strains may be of value under certain conditions.

Trees of the Valencia strain are most productive and bear the largest quantities of the best-grade fruit and the most valuable sizes for commercial purposes.

Trees of the Valencia strain produce fewer variable fruits than those of other strains.

All the strains described can be isolated through bud selection based on individual-tree performance records.

Healthy trees of undesirable strains in established orchards can be top-worked and their value improved thereby when fruit-bearing bud wood from selected trees of the Valencia strain is used for this purpose. A practical method for locating such trees and bud wood and a discussion of their treatment in commercial orchards are presented in Farmers' Bulletin 794 of the United States Department of Agriculture, "Citrus-Fruit Improvement: How to Secure and Use Tree-Performance Records."

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
25 CENTS PER COPY

▽